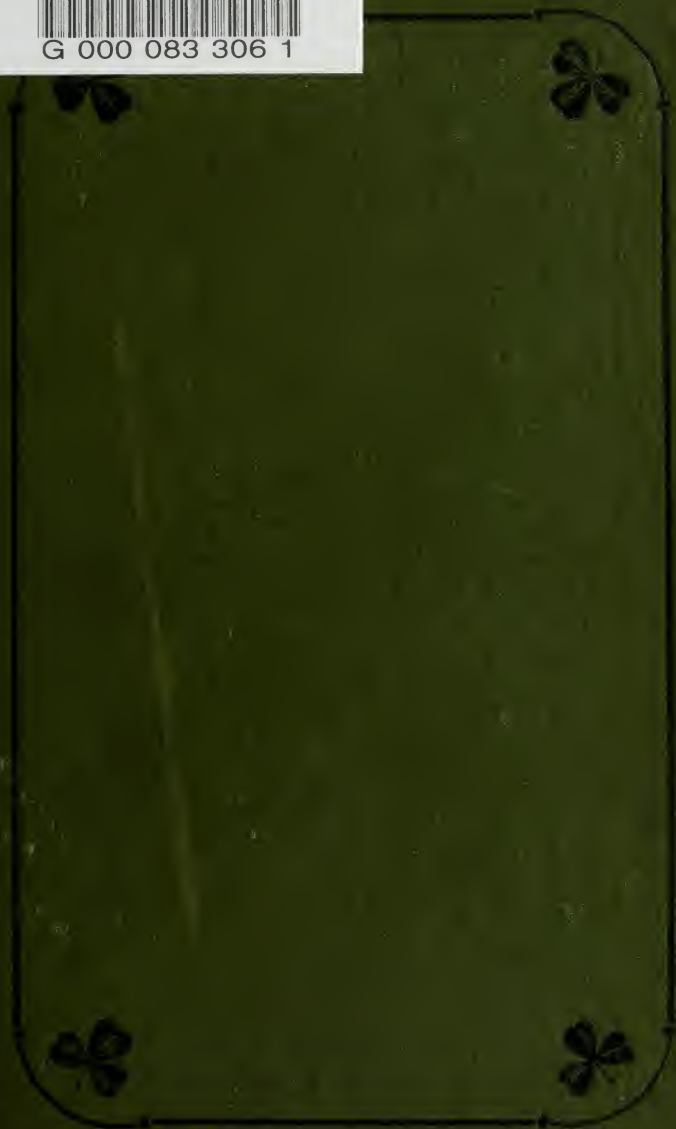


UC SOUTHERN REGIONAL LIBRARY FACILITY



G 000 083 306 1





THE LIBRARY  
OF  
THE UNIVERSITY  
OF CALIFORNIA  
LOS ANGELES



A. 3. 9.



# INDUSTRIAL IRELAND:

A PRACTICAL AND NON-POLITICAL VIEW OF  
"IRELAND FOR THE IRISH."



# INDUSTRIAL IRELAND:

*A Practical and Non-Political View of  
"Ireland for the Irish."*

BY ROBERT DENNIS.

---

"The greatest cause of Ireland's calamities is that Ireland is idle. Ireland is idle, therefore she starves. Ireland starves, therefore she rebels. We must choose between industry and anarchy."—JOHN BRIGHT.

---

LONDON:

JOHN MURRAY, ALBEMARLE STREET.

1887.



LONDON :  
PRINTED BY WILLIAM CLOWES AND SONS, LIMITED,  
STAMFORD STREET AND CHARING CROSS.

AMSTELIAE TO VIRI  
21.10.1911  
YR. 1911

HC  
257  
I6I1

## P R E F A C E .



THE aim of the author of this book has been to prove that Ireland may be made a prosperous industrial country—a matter upon which generations of poverty would appear to throw some doubt. To teach the Irish people the great lesson of self-help seemed to the writer a desirable thing to do; and he thought the best method was to show them what varied employment for their labour, what virgin sources of national wealth, lie within their grasp, if they will only pluck up courage and energy and enterprise equal to that which the Irish race exhibits in other parts of the world. Their cardinal industrial sins are essentially sins of omission. They do not manipulate their local products. They export the raw material, and they import the manufactured article. Instead of holding on to the raw material until they have brought it up to its highest commercial value, by putting into it the very utmost amount of labour it will profit-

HARDING  
DEC 16 1940  
LIBRARY SETS

411926

ably bear, they part with it at the first opportunity, well knowing (as they must) that by-and-by they must buy it back again, weighted with the labour expended on it by other nations. But even with this wasteful practice the resources of Ireland are not half developed, as the following pages will abundantly prove. Ireland wastes her substance, not in riotous living, but out of sheer thoughtlessness and thriftlessness; and what she does not waste, she neglects. It is as if the inheritor of an ample fortune refused half of it, and starved on the remainder.

Most of the papers comprised in this volume were first printed in the *St. James's Gazette*,\* and excited a very considerable amount of interest both in England and Ireland. They do not profess to be based on an entirely new body of facts, or to be the result of an elaborate special inquiry: they merely bring together a great deal of hitherto scattered or hidden information upon a subject of admittedly pressing importance. So far as its statements of fact are concerned, therefore, the book pretends to no higher title than that of a trustworthy com-

\* Chapters XI., XII., XIV., XV., XVI., XVII., and XVIII. are additions to the original series.

pilation ; while its conclusions and suggestions upon points respecting which the authorities differ are at least founded on an impartial consideration of the evidence. If any bias at all has existed in the mind of the writer, it has been in favour of putting the best complexion on the industrial capabilities of Ireland, with the view of attracting those who might aid in their development. The too familiar political controversies of the hour have not been touched. They begin where this book concludes ; and the only remark the writer has to make is, that a habitable country—a country whose natural resources are well adapted to the maintenance of human existence in comfort and prosperity—ought not to be difficult to govern.

R. D.

LONDON,

*January, 1887.*





# CONTENTS.



	PAGE
PREFACE . . . . .	V

## CHAPTER I.

### DEPRESSION AND ITS CAUSES.

Ample Resources of Ireland, but practically no Industries—Comparison of Belgium and Ireland—The “Historical cause” of Depression—English Fiscal Persecution—Scope of the Inquiry—Agriculture—Fisheries—Mining and Quarrying—Metal Goods—Flint Glass Manufacture—Paper-making—Shipbuilding—Derelict Mills—Waste of Resources—General Propositions . . . . .	1-9
--	-----

## CHAPTER II.

### CORN AND OTHER FOOD CROPS.

Decline of Wheat-growing—Barley and Oats—Oatmeal as Food—Dependence on the Potato—Ignorance of Rotation of Crops—Why the Potato is grown—One remove from Barbarism—Waste of the Hay Crop—Advice to the Cultivator, the People, and the State .	10-22
--	-------

## CHAPTER III.

## LIVE AND DEAD MEAT.

PAGE

Export of Live Cattle from Ireland—Loss by “Sweating”—Advantages of Dead-Meat over Live-Meat Trade—Evil effect of present System on the Tanning and other Industries—Conveyance of Dead Meat—Abattoirs—The Middleman blocks the way—A Plan for dispensing with him—Cured and Fresh Pork	23-31
---	-------

## CHAPTER IV.

## THE BUTTER TRADE.

Annual Output—Danger of Extinction—Foreign competition in better methods—Bad Management of Irish Cows—Bedrooms as Dairies—How Irish Butter goes to Market—Unwholesome Pastures—Comparison of Prices—State Dairy-farms Abroad—Irish Milkmaids—Improvement of Transport—Butterine—The Cork Butter Market—Good prospects with better management . . . . .	32-43
--	-------

## CHAPTER V.

## THE FISHERIES.

Abundant Supply of Fish—Boats, Nets, and Piers wanting—Curing-houses—Different Classes of Boats needed—Effect of the Kelp “Boom” on the Fisheries—The Irish Railways and the Fish Trade—Suggested Railway Scheme for the Connemara Coast—Instruction of Fishermen—An Industrial Fishing School—Loans—Lady Burdett Coutts and Baltimore
--

—The Fishery Commissioners and County Clare— Bounties in Former Times—Oyster Cultivation— Mussels and Periwinkles—The Fresh-water Fisheries	PAGE
---	------

44-57

## CHAPTER VI.

### PLANTS USED IN MANUFACTURES.

Flax—Decline of cultivation though the demand has risen—Foreign Flax—The Writing on the Wall— Room for Threefold Development—Difficulties to be overcome—Value of a Model Flax-farm—The After- manufacture—Central Retteries—Flax-growing in Munster and Connaught—Hemp—Straw—Osiers— Tobacco—Beet—Kelp . . . . .	58-70
---	-------

## CHAPTER VII.

### MINES AND QUARRIES.

Exhaustion of Copper, Tin, Lead, Silver, and Gold— Former Gold and Silver Workings in Ireland— Account of the Chief Coal-fields—Castlecomer, Coal- island, Tipperary, Clare, Ballycastle, and Arigna —Two hundred and nine million Tons of available Coal—The Antrim Iron Region—Two hundred and thirty-two million Tons of Ore, yielding Forty per cent. of Metal—Bringing the Coal and Iron together —Difficulty owing to depressed condition of the trade generally—Preliminary Borings—Irish Marbles, Serpentines, and Granites—Importation of Foreign Marbles and Neglect of Home Resources—Irish Granite in the Albert Memorial and Thames Em- bankment—Prohibitory Railway Rates—Irish Archi- tects and Foreign Materials . . . . .	71-83
--	-------

## CHAPTER VIII.

## TIMBER AND PEAT.

PAGE

Admiral Collingwood and the Acorns—Improvident Tree-felling in Ireland—Remains of former Forests— The balance between Forest and Prairie—Extensive Replanting necessary—Area suitable for Replanting— Cost—Direct and indirect advantages—Value of By- Products—Scarcity of Birds in Ireland—£130,000,000 gain from Reafforestation—Nature of Peat—Useful only as Fuel and Litter—Various Experiments	. 84-93
--	---------

## CHAPTER IX.

## TEXTILE AND LEATHER TRADES.

Linen Manufacture—Need of Accelerated Development —Belgian and German Competition—Large import of Foreign Flax although sufficient might be grown at Home—The Woollen Trade—Re-establishment of Mills at Blarney, Dublin, and other places—Non- manufacture of Irish Wool in Ireland—Objection of Irish People to the use of Irish Woollens—Action of North Dublin Guardians—Revival of Blanket-making —Irish Goods always too late for “the Season”— Faulty and Unsaleable Character of Irish Cloths— Poplin—Hosiery—Further complaint that the Irish will not buy Irish Goods—The Leather Trade— Export of Raw Hides and Import of Leather Goods —West of England competition	. . . 94-107
--	--------------

## CHAPTER X.

## POTTERY, GLASS, METAL-WORKING, AND CHEMICALS.

	PAGE
Excellent Pottery formerly made—Situation of Clay Beds—The Belleek Pottery—Great artistic merit of Mr. Armstrong's Work there—Desertion of the Best Hands—Non-appreciation of Belleek-ware in Ireland —Sale of the Pottery and Present Condition—Need of Technical Schools—Flint-glass Factories—Waterford "Glass House"—Ample Supply of Glass Sand and Granite—Bottle Manufacture—Suggestions as to establishing Metal Trades, such as the making of Cutlery, Implements, Tools, and Guns—Large Chemical Trade—Export and Import of Sulphate of Soda—Artificial Manures . . . . .	108-121

## CHAPTER XI.

## PAPER AND FLOUR MILLS.

Export of Rags and Import of Paper—English Com- petition—Facilities for Manufacture of High-class Paper—Paper Bags—Decadence of Flour-milling— Roller-machinery <i>versus</i> Millstones—American Com- petition—Austro-Hungarian Method—Great Want of Bran and Pollard in Ireland—High Prices of these Articles, and Evil Effect on Cattle and Dairy In- dustries—Advantages of Ireland as a Milling Country —Suggested Duty on Imported Flour—Protectionist Heresy . . . . .	122-132
--	---------

## CHAPTER XII.

## A GROUP OF MINOR TRADES.

Handicraft in Ireland—Depression in various Trades— Particular reference to Coach-building, Boot and Shoe-making, and Brush-making—Large Supply from England and the Continent—Excellent Quality of Irish Workmanship—Injury done by Trade Unionism— Irish Industrial Characteristics—Want of Business Aptitudes, though the Irish are Good Workmen	PAGE 133-140
---	-----------------

## CHAPTER XIII.

## COTTAGE INDUSTRIES.

Six Months' Idleness in the Irish Cabin—Suggested Occupations for the Peasants—Osier-weaving— Numerous Uses of Osiers—Bog-oak Carving—Straw Bottle-envelopes—Straw-plaiting—Weaving, Knit- ting, and Embroidery—Mrs. Ernest Hart's Work in County Donegal—Room for great development of Cottage Industries on similar lines—Large Supply of Cheap Labour—Mrs. Edward Ponsonby's Em- broidery-school at Garry Hill—Bees and Poultry	141-153
--	---------

## CHAPTER XIV.

## LAND IMPROVEMENT.

Abortive Discussions in the Past—Importance of Reaf- orestation—Suggested Shelter-belt along the West Coast—Functions of Forests—The Duty of the State
--

	PAGE
—Drainage of the Great Central Plain—Failure of Previous Schemes—Proposed Drainage Boards with Special Powers—Benefits to be expected—Climatic and Hygienic Effects—Obstructive Tenants—Land Reclamation—Experiments in various Rivers and Estuaries—Particulars as to Sligo Estuary—Reclamation of Sand-hills—Lord Palmerston's Experiment—Ireland's "Reserve Claim" . . . . .	154-164

## CHAPTER XV.

### MOTIVE-POWER AND MACHINERY.

Backward State of Ireland—The Cost of Coal—Water-Power—Instances of its Existence—Means of Employing it—Advantage even in small Operations—Windmills—Peculiar Circumstances as regards Machinery—Differences between Ireland and England—Cheapness of Labour in Ireland . . . . .	165-173
---	---------

## CHAPTER XVI.

### THE IRISH RAILWAYS.

Importance of the Transit Question—The Railway System of Ireland—The War of Railways upon Industry—Non-development of Traffic since 1849—Great Road Traffic even where Railways exist—Short-sighted Policy of Managers—Charges against the Companies—Classification—High and Unequal Rates—Great Disparity between Local and Through Rates—How this affects Irish Producers and Merchants—Disastrous result to Industry—Deficient Facilities—
---

Divided Management—Necessary Remedies—How to effect them—The Belgian Government and the Railways—Extraordinary Development of Traffic under low Rates—Proposal of a State-Guaranteed Dividend in return for more liberal Management	174-188
---	---------

## CHAPTER XVII.

## THE FINANCIAL SYSTEM.

Total Capital of Ireland—Present Distribution and Employment—Five-sixths Invested Abroad—Illiberal Policy of Irish Banks—Contrast in the case of Scotland—Cash Credits—Assistance in various Forms of Business—Need of Banking Competition in Ireland—Reference to Loans to Fishermen, all repaid—Loans to capable Men for Manufactures—General Absence of Credit in Ireland—Markets for Irish Produce—English Agents at the Fairs—Their Monopoly—Advances made by them to Farmers—The “Gombeen” Man—Usury and Banking . . . . .	189-197
--	---------

## CHAPTER XVIII.

## CONCLUDING WORDS.

Other Points not Touched upon—Hope for Ireland—State Assistance by Loans, Legislation, &c.—Self-Help—Consumers Helping Producers—Full Manipulation of Local Products—The English Market for Irish Goods—The Valley of Dry Bones . . . . .	198-202
---	---------



# INDUSTRIAL IRELAND.

---

## CHAPTER I.

### DEPRESSION AND ITS CAUSES.

Ample Resources of Ireland, but practically no Industries—  
Comparison of Belgium and Ireland—"The historical  
cause" of Depression—English Fiscal Persecution—Scope  
of the Inquiry—Agriculture—Fisheries—Mining and  
Quarrying—Metal Goods—Flint Glass Manufacture—  
Paper-making—Ship-building—Derelict Mills—Waste of  
Resources—General Propositions.

THE famous chapter "concerning snakes in Iceland" might almost be applied to industries in Ireland. It would not be quite correct to say that "there are no industries"; but it is true that, with the exception of the linen trade, the distilling of whisky, and the brewing of porter, no agricultural, mining, or manufacturing occupation is being carried on with proper energy or adequate profit. Taken generally, those Irish industries which are not already extinct are in a languishing condition. Not one of them is really healthy. Yet it has been

declared by an indisputable authority\* that "the constitution of the rocks and soil of Ireland, its extent of ores and fuel, its supply of water, its extent of lakes and rivers, its harbours, all fit it for industry in agriculture, in manufactures, and in commerce, in a degree which, although not entitling it like England to grasp at the commercial and manufacturing sceptre of the world, should certainly enable it to be the source of employment and comfort to its own people." How are we to reconcile this natural adaptation to the purposes of industry with the sickly condition of Irish industries generally—involving, unhappily, the greatest discomfort and misery for the Irish people instead of the "employment and comfort" they ought to enjoy? Here we see a starving people in a land of plenty. A country capable of producing in abundance every necessary of life for a population as dense as that of Belgium fails, in point of fact, to support a population less dense by 280 persons per square mile. An island which forty years ago contained more than eight million souls now offers but the barest subsistence to less than five millions.

\* Sir Robert Kane's 'Industrial Resources of Ireland,' 1846.

It is our purpose to throw some little light on this mysterious problem.

Given the necessary raw materials, capital, and skilled labour, nothing is easier than to turn trees into chairs, and ore into the finest products of metallifacure. There is no magic about manufactures ; they are a great deal less wonderful than the simplest processes of Nature upon which the farmer relies for success in his business. At one time, we are told, all these essentials existed in Ireland. It was at some period before the Union. Attempts have been made to fix upon the Union the responsibility for the decay of industry in Ireland. It is alleged that the decline began directly the Act of Union was passed, and the administration of the country came into "foreign" hands. The same results followed, it has been said, as might be expected to ensue in England if suddenly the seat of the Government of the country were removed to Paris ; and this is what has been labelled "the historical cause" of the present depression in Ireland. But the fact is that the beginning of the decline, instead of being coincident with the Act of Union, must be looked for twenty years and more earlier. The great

“boom” was from 1748 to 1779. The effects of it lasted somewhat later ; and it was not till 1800 that the decline which followed exhibited itself in the statistics. Therefore, those who profess to show by statistics that the decline followed immediately upon the Act of Union prove by that very fact that the *causes* of the decline must have been in operation long before the Union.

Then there are other accusations of a political and historical nature. We are told that English fiscal persecution killed the industries of Ireland. Perhaps it did. But that is an old story now, and may be left to the historians. As practical men, we must deal with things as they are—not as they were or as they might have been. Not in a party spirit, which dwells morbidly on the past and embitters the present, but with an open mind and a sincere desire to get at the truth, we will try to ascertain why at this moment the industries of Ireland bear so small a proportion alike to the labour power of the population and the natural resources of the country.

In order to prosecute this inquiry it will be necessary to go into many particulars. The capability of the soil for the various means of food pro-

duction—the growth of cereals, of roots, and of edible crops generally, the raising of cattle and sheep, the manufacture of butter and cheese, and the rearing of pigs and poultry; the mineral resources of the country, both in fuels and metals; the fisheries; the extent to which natural motive-power exists and can be made available; the question as to how far an improvement in the productiveness of the land might be effected by drainage, by reafforestation, or by reclamation; the question of the manufactures suitable to the country, whether in the textile, metal, plastic, or chemical trades; the provision of proper facilities of transit from the producer to the consumer; and, finally, the financial machinery by means of which all these multifarious operations may be smoothly and profitably carried on:—such may be taken as examples of the details necessary to be considered by any one who undertakes to deal seriously with the problem.

First let us glance at the existing state of things generally. This will best be done by specific references to particular trades. We have said that all the trades of Ireland are depressed, except those in linen, whisky, and porter. Agriculture, it will be freely admitted, is in a bad way, although there

have been abundant harvests since 1880, not only of cereals, but of potatoes, as well as the crops which come under the head of "feeding stuffs" (hay, mangolds, etc.). Economic causes are alleged for the difficulties under which the Irish farmers labour; they have nothing to do with the soil or the climate. Cattle and sheep raising is stationary, notwithstanding that tillage land is decreasing and grazing land increasing in extent. The fisheries of Ireland are terribly neglected. Mining and quarrying can scarcely be said to exist. There are difficulties in the way of any considerable metal industry in Ireland, but a good trade was once done in metal goods—such as cutlery, guns, needles and pins, copper and brass goods, jewellery, etc. All these industries are dead or dying. English competition has driven Irish cutlery out of the market, as our cutlery is being driven by German wares. The Irish gentry no longer require guns save for self-defence, and even these they buy in England; pin-making languishes for lack of Home Rule (so says the solitary pin-maker in Ireland); the copper and brass trade is declining from the sheer absence of skilled workmen, there being a very general aversion in the trade to apprentices; and jewellery is no

longer bought—at least, none of Irish manufacture. Even dial-plate making, which formerly supported a good many skilled hands in Dublin, has died out. A few years ago there was but one dial-plate maker left in Ireland. He would not take an apprentice, but went to England. His disappearance killed the trade, and the plant he used was purchased for 15s. by the Museum of the College of Science. Formerly there were thirteen flint-glass works in Ireland; now there is only one. Coach-building used to be a flourishing trade, but now it is merely the shadow of its former self. Paper-making was crippled by the abolition of the duty, which brought in Belgian and other foreign papers; indeed, it only survives in exceptional cases where the advantages of large capital and special skill existed. A firm of gold and silver lace-makers struggled against fate for forty years, and then gave in. The banks of the Suir at Waterford used to ring with the merry hammers of the ship-builders; but they are silent now. There is not a town in Ireland where you may not see one or more derelict mills, hollow and roofless, testifying to the lifeless condition of manufacturing industry in general.

Even the cow and the pig—Pat's staunchest friends for many a long year—are failing him. Irish butter, once so favourite an article in Leadenhall, has fallen into the disrepute now unhappily attaching to most things Irish. Normandy and Denmark have usurped its place; while even the hated Saxon has succeeded better with his despised "Dosset" than the Cork merchant with the choicest product of that favoured county. An enormous trade is still done in Irish bacon, no doubt; but it is said not to be remunerative. It has been truly remarked that any serious decay of the dairy and bacon industries of Ireland would rise to the proportions of a national calamity. Yet the process has indubitably begun, and will not now be arrested without difficulty.

Meanwhile, many wasteful operations are going on, many opportunities are being thrown away. We might refer specifically to the neglect of the fisheries and the wholesale cutting-down of trees. These are typical examples of the waste and improvidence which characterize all the industrial processes of Ireland, from cattle-breeding to seaweed-gathering. Everywhere we see the people taking short cuts to a bare livelihood. Industries



which call for sustained effort, whether of labour or capital, languish and die ; those that survive are of the hand-to-mouth order. These assertions we shall make good in detail. For the present, it is enough to state the general propositions that—(1) there exists great industrial depression in Ireland ; (2) this depression is inconsistent with the presence of a healthy population and ample natural resources ; (3) that the actual causes of the depression are to be found in existing circumstances, and not in more or less ancient history ; (4) that they are, in certain conditions, remediable. It may not be possible or desirable to bring back the last Irish dial-plate maker from England and rescue his plant from the museum in which it is buried ; but we may, at least, infuse vitality into industries by which a great part of the population might live, and especially do something to remove that entire dependence upon the land which is the primal curse of the Irish race.

## CHAPTER II.

## CORN AND OTHER FOOD CROPS.

Decline of Wheat-growing—Barley and Oats—Oatmeal as Food—Dependence on the Potato—Ignorance of Rotation of Crops—Why the Potato is grown—One remove from Barbarism—Waste of the Hay Crop—Advice to the Cultivator, the People, and the State.

AS in most other countries, in Ireland the cultivation of the soil is by far the most important industry. Indeed, if we include under one head the whole of the businesses which have their basis in the soil, we at once put all other industries *hors concours*. But even if we limit the subject to the growth of cereals, herbs, and roots for the food of man and beast, we must admit its vast and indeed primary importance. Now Ireland, in this particular department of industry, has but a poor record. It is a record of steady decline. Most people will be surprised to know that at one time Ireland was a great wheat-growing country. At that period it was the wheat crop that paid the rent. Throughout the south and east and centre of Ireland thousands of acres of wheat might have been seen ;

and it would appear that the crop was generally abundant and profitable. But of late a complete change has come over the face of the country. A vast extent of land formerly tilled with wheat, barley, or oats has been laid down to grass, not always with the best results ; for it is well known that the production of beef and mutton has not increased in proportion to the increased extent of grazing land. The experts say it does not pay to grow wheat in Ireland. Free trade has made it impossible to compete against the rentless and taxless wheat-grower in America—the tiller of a virgin and unencumbered soil. The inequality of the competition is aggravated by the charges for carriage ; for while wheat and maize are brought from New York to Liverpool for 7*s.* 6*d.* per ton, the freight from Trew and Moy to Liverpool is 14*s.* But it does not pay to grow wheat even for home consumption ; and Ireland, like England, imports more than she produces of the first article of food.

A few recent statistics throw an instructive light upon the present condition of wheat-growing in Ireland. From the 25th of September to the 1st of October, 1886, there arrived in London 95,415 qrs.

of foreign wheat. England's contribution was 4,493 qrs. only ; while neither from Scotland nor Ireland did we receive a single grain. Scotland does occasionally send us small parcels of malt and oats ; but from Ireland we get nothing. Under existing fiscal conditions, therefore, there is no possibility of reviving wheat-growing in Ireland. The Irish farmer, like the English farmer—and in much less favourable circumstances as to soil, climate, and markets—has to fight the men who “scratch” the land and forthwith gather an abundant harvest, whether in India, on the Black Sea coast, in California, or on the great central American plain.

- With regard to barley and oats, the prospect is more hopeful. These crops do not exhaust the soil so much as wheat, and are more suited to the present low condition of Irish agriculture. Besides, there is a better market. Vast quantities of foreign barley come to this country, no doubt ; but British malt still holds its own, and it is in the form of malt that Irish barley mostly finds employment. Indeed, oats and barley still remain remunerative crops in Ireland. The enormous distillation of whisky and brewing of porter use

up practically the whole of the barley that Irish farmers can grow. We are not aware whether it is the native barley which gives its distinctive character to the native liquor; but we hope it is, for thereby Irish barley is assured of a steady and unassailable monopoly. As for oats, they will always be in full demand for feeding purposes, despite the great increase in the manufacture of artificial feeding-stuffs, some good, but most of them bad. Moreover, litter must be had somehow; and Ireland has not yet learnt to do without straw, notwithstanding the fact that any quantity of peat litter might be obtained if the Irish farmers were only taught how. But perhaps they would learn at the same time that to use straw for litter is wasteful, inasmuch as it will fetch a much higher price if saved so as to be suitable for packing bottles, and, if well chopped, makes either by itself or mixed with meal an excellent food for cattle.

After all, the main hope for cereal-growing in Ireland would be found in any indication that the Irish people were radically altering their habits as regards food. The potato (to which we shall come presently) is still the staple article of food in many parts of Ireland. Why do the people not eat

oat or wheat or barley meal? The dependence of the people upon the potato crop has been one of the chief causes of all the sufferings they have endured. We will say nothing about wheat or barley ; but we do say that if the Irish would only themselves consume as food the produce of the 1,500,000 acres annually sown with oats, they would thrive better both in pocket and person. At present they eat either potatoes, or an inferior kind of bread, or bread so superfine as to be very costly and in-nutritious. The potato and the white bread must alike be abandoned in favour of porridge and the oatmeal cake ; and then it will pay to grow oats in Ireland to a far greater extent than is done now, while the people will live cheaper and better. It may also be suggested that the more liberal feeding of cattle with oats would probably have its reward. At all events, it is certain that, given a sufficient demand, oats can be grown in Ireland for home consumption to compete successfully with foreign oats ; and we need not concern ourselves with the matter further. If the demand does not exist, it ought to.

Now a word as to the potato. In his pamphlet on "Famine and Fever, Its Cause and Effect in

Ireland," Sir Dominic Corrigan says :—" The potato has, I believe, been a curse to that country ; it has reduced the wages of the labourer to the very smallest pittance, and when a bad crop occurs there is no descent for him in the scale of food ; the next step is starvation." Sir Dominic is here guilty of a perversion not unlike the familiar misquotation " Money is the root of all evil," instead of " the love of money." It is not the potato which is the root of all evil—the joke is an old one—in Ireland, but *dependence* upon the potato. In its place the potato is very good ; but its place is certainly not as the main bulwark between a whole people and starvation. Other root crops might and should be grown, or various kinds of garden produce. Ireland has not the natural advantages of Jersey ; but there is no reason why she should confine herself to the growth of any one vegetable. When enough potatoes have been grown to supply the people with them as an auxiliary article of food, their further cultivation should be discouraged. A better class of crop—either cereal, root, or herbal—might almost in all cases be substituted. In this direction much good might be done by teaching the people the art of gardening, of which they are woefully

ignorant. Excellent suggestions have been made for attaching a plot of land to every National school in the rural districts, but as yet they have come to nothing.

Here, indeed, we approach the threshold of a very large question, bearing intimately and vitally upon the whole problem we are considering. We have shown that, apart from wheat, cereals can be profitably grown in Ireland, provided they are consumed upon the spot ; and that great advantage would arise if the Irish tenants could be induced to place less reliance on the potato. But all this depends on their ability to cultivate cereals and other crops ; and upon that head a serious difficulty meets us. The Irish know next to nothing about the rotation of crops. If it is not the everlasting potato, it is the everlasting barley ; and if it is not barley, it is oats. Hundreds of the tenants go on planting year after year precisely the crop their fathers planted before them. They have no notion of giving the land a rest or a change. Irish agriculture has been described as the most barbarous in Europe, because of the small number of crops that are cultivated. The English farmer goes through the regular rotation of wheat, turnips, oats, mangolds,



barley, vetches, hay, clover, and so on ; but of this sort of farming the Irish tenant is absolutely ignorant. One of the first necessities in effecting any real improvement in the condition of the people who live upon the land is to teach them their business.

Why is the potato so much grown and consumed in Ireland ? It is because potato-growing and potato-eating form the simplest process by which the Irish tenant can keep body and soul together. He turns up his land, plants it, waits four or five months, and then digs the crop. The product of these operations is his sustenance. It has not, like cattle or wheat or any of the higher products of farming, to be turned into money before it can be made available for his own use. The complex transactions by which producers and consumers in a civilized society provide for the wants of others and secure the satisfaction of their own, do not enter into the economics of the Irish peasant. He sticks his potato into the ground, and in due time he gathers the harvest. Feeling hungry, he goes to his store, deals himself out potatoes enough for a meal, claps them into a pot, eats them, and is content. He is, in fact, only one remove from the savage

who digs up roots from an otherwise undisturbed soil. The substitution of oats for the potato would place him one degree higher in the scale of agricultural progress, by processes which need not be described. We should then get the Irish tenant past the stage at which a man lives from hand to mouth on the free yield of Nature, into the stage at which agriculture becomes an industry, providing him, by exchange or sale, not only with mere sustenance, but with comforts of which he has hitherto had no experience. In order to accomplish this we may have to give him some assistance. It may be necessary to help him in many cases to tide over the period during which, waiting for the return from the oat crop, he would starve if left alone. There is all the difference between growing a thing that can be eaten and a thing which has to be sold. But of this we may be sure: so long as the main reliance of the Irish people is put on the potato, so long will they remain in their present elementary condition. Indeed we firmly believe that, if any kind of food grew wild in Ireland, not even the potato would be grown. "I have yams and bananas in plenty; why should I toil?" the negro asks. And indeed why should he; and what is the

good of anything ; and why toil to live, when life itself is a doubtful blessing ? That is precisely the spirit of the Irish peasant over by far too large a part of the country. In the barbarian simplicity of his nature he has taken to potato-growing. Further progress towards a higher life he cannot or does not make. He has not yet seen the good of it.

Take another primitive crop—namely, the hay crop—and look at the disgraceful way (it is nothing less) in which it is mismanaged in Ireland. There is no crop that sells better or that might be grown with greater ease. Yet there is annually a terrible waste from leaving the crop out in the fields so long that it becomes blackened and deteriorated ; while enormous quantities are lost every year from being stacked in places liable to floods. Imagine the folly of building a haystack where it is very likely to be washed away ! Then there is said to be in Dublin a steady demand for good hay ; indeed, it sometimes goes up to “famine” prices. At all events, prices can be obtained there quite sufficient to cover the cost of carriage from any part of Ireland. Not, however, if the hay is sent in loose bulk, as is almost invariably done. It is a

fact, though well-nigh incredible, that the Irish farmers have not yet learnt the simple art of compressing hay for carriage by rail, and that for want of this knowledge thousands of tons are annually left to rot which in Liverpool, or even London, would fetch £4 a ton. But even that is not the worst. Some few years ago the Midland Railway Company of Ireland got from America four of the most improved trussing machines. They sent them through the country and tried to instruct the people in the trussing of hay; but they would not learn. That was when hay, unsaleable at the place where grown, would have been eagerly bought for £4 a ton in Dublin. The machines are now lying idle, nobody seems to know exactly where. There was one case in particular of a man who could not sell his hay even for £2 per ton. He was offered the chance of trussing it and sending it for 7s. 6d. per ton to Dublin, where it would have fetched £4. He would not do it; he would not take the trouble.

Now it is evident from all this that the Irish farmer wants bracing up. He must be trained to cultivate the soil with forethought, with knowledge, and with energy. He must be persuaded to make

full use of the marketing facilities provided for him. Such improvident tricks as the constant cultivation of the same crop must be abandoned. Within certain limits, Irish agriculture might be brought to the highest pitch of perfection. At present it is not "culture" at all. You might as well call a man who sticks half-a-dozen cabbage-plants into the ground a gardener.

We have said nothing yet as to other great industries connected with the land—cattle, sheep, and pig-raising, horse-breeding, or dairy-farming. They are important enough to be considered separately. Besides, it is not sufficiently recognized that the cultivation of the soil and the raising of stock are two entirely separate businesses. They are frequently combined, because there is a supposed saving when a man grows the food for fattening his own stock, or keeps stock to consume the food he grows. But in Ireland it will generally be found that the two businesses are best separated. With regard to the cultivator, the last word to be said to him may be summed up in the advice: Grow chiefly what is in greatest demand for home consumption. To the Irish people generally may be said, in their own interests as well as

in those of the cultivator: Cease to regard the potato as the staple article of food; if you cannot afford meat and good bread, eat oatmeal, of which your country can produce enough to make it as cheap as potatoes. To the State may be said: Try to devise some means of instructing the cultivators of Ireland in the rotation of crops, in maintaining the fertility of the soil, and in the choice of good seed. Show them, moreover, the value of improved methods not only of growing crops, but of putting the produce into the market. Overcome their ignorance and apathy, (no small task, truly!) and tillage of the land will at once become one of the most profitable of Irish industries.

## CHAPTER III.

## LIVE AND DEAD MEAT.

Export of Live Cattle from Ireland—Loss by “Sweating”—Advantages of Dead-Meat over Live-Meat Trade—Evil effect of present System on the Tanning and other Industries—Conveyance of Dead Meat—Abattoirs—The Middleman blocks the way—A Plan for dispensing with him—Cured and Fresh Pork.

THE difficulty of obtaining accurate statistics, which is found in regard to all the Irish industries, is perhaps greatest in the case of cattle-raising. All we know for certain is that the cattle trade is the largest export trade now carried on in Ireland. Approximately it may be said that half a million cattle are exported from Ireland annually, and about a million and a half of sheep. The number of pigs exported cannot even be guessed at; but we will come to them later on. The whole of the cattle and sheep are exported alive, and no one who has ever crossed the Channel in an Irish cattle-boat will need to be told that the traffic is carried on with every aggravation of cruelty and waste. The poor beasts are badly stored, have to bear the full brunt of whatever weather may be going, and

are frequently as long as thirty or forty hours at sea. The result is that they suffer deterioration in value (technically called "sweating") to the extent of 30s. per beast. The hide is damaged, the animals are thrown into a high fever, and a certain proportion of them die. This means a total loss of more than a million sterling per annum, without benefit to anybody. That amount of money may be regarded as sent annually to the bottom of the Irish Sea, as the contribution of a thriftlessly conducted trade.

Now, the obvious remedy for the evil is the conversion of the live-meat into a dead-meat business. Irish cattle, despite the damaged condition in which they arrive, always command a good price in the English market; and Irish dead meat would no doubt be bought just as readily. By the provision of proper facilities for transit, the meat could be brought over in perfect condition. It need not be frozen, but just chilled, and then carried in refrigeratory cases or vans on steamer and railway, precisely as is done now with the large consignments of dead meat from Scotland to London. The result would be a saving of the whole of the million sterling which now goes to



the bottom of the Channel. But that would not be the only advantage. Owing to this wholesale exportation of live stock, Ireland is denuded of the raw material of several useful and remunerative industries. The hide and leather trade is simply crippled from want of hides—we mean the trade in all its branches, from tanning to boot and shoe making. Ireland has to import the leather she ought to make at home. There used also to be a considerable horn comb trade, which has wholly disappeared. Then the bone and blood manure trade, the soap and candle trade, the gut trade, the sausage-skin trade—indeed, all the trades which obtain from offal the whole or an essential part of their raw materials—might be enumerated as starved out of existence by the way in which the meat trade is carried on.

But is it practicable to effect the necessary change? No doubt there are objections. All the steamers are at present constructed for carrying live cattle, and not dead meat. That is a serious but not insurmountable difficulty. Somewhat similar is the fact that slaughter-houses do not exist in sufficient number, or at the most convenient places, along the railway lines; while the

railway lines themselves are not provided with refrigeratory vans. The answer to these objections happens to be simple enough. The Midland and Great Western Railway Company of Ireland has already made an experiment with the view of encouraging the trade. An abattoir was erected at Dromod, county Leitrim, in 1883. In 1884 no fewer than 20,000 pigs were slaughtered there and taken on as fresh pork to the London and Manchester markets. Nothing was done—or very little—with cattle or sheep. Dromod was taken as a central or typical place, and if the plan succeeded there abattoirs were to be erected all along the line. It did succeed, but it got no further. It had developed the trade, it had benefited the railway company, and yet it was carried no further. Why? We are told that “for some reason the traders (*i.e.*, middlemen) did not approve of it.” These are the words of Sir Ralph Cusack, chairman of the railway company. The plain fact is that these middlemen, who make large profits out of the live-meat trade, will not permit it to be turned into a dead-meat trade. They have lent<sup>t</sup> money to the graziers upon a mortgage of the stock, they have shares in the cattle-steamers,

they are the owners of a monopoly from which profit can be squeezed at both ends, and they will not be disturbed.

If there were not this difficulty, all others would disappear. All the railways would construct abattoirs at intervals of, say, thirty miles (wider intervals would not do, on account of cattle-disease restrictions upon the moving of cattle); they would provide refrigeratory vans, and there would soon be a fleet of suitably constructed steamers. The London and North-Western Railway Company has offered to have its steamers between Dublin and Holyhead fitted for the trade, and to run refrigeratory vans between Holyhead and London, fixing the rates so as to leave even the Irish middleman a fair profit. It was this company which first established the principle of the great hampers now used for the conveyance of fresh pork from Dublin to London in the winter season. No doubt similar arrangements would be made on the Great Western line between Waterford and Milford and by the Cork Steamship Company, as well as by the numerous lines connecting the north of Ireland with England and Scotland. In short, there is no really formidable difficulty except the

indebtedness of the grazier to the middleman. The distance which separates the producer from the consumer is no obstacle whatever. A carcass killed at an abattoir upon any railway in Ireland could be delivered in Manchester, Liverpool, or London in prime condition within fifty-six hours. It cannot be brought from Australia in as many days ; while even from America and Canada the transit takes a fortnight.

One word here as to whether, if all imaginable difficulties were removed, the trade would thrive. We are aware of the severity of foreign and colonial competition, and that hitherto the Irish trade has existed, or imagined it has existed, on the preference of the public for fresh-killed meat as against frozen meat. We are aware that a well-known firm which used to ship £40,000 worth of dead meat annually from Dublin to Glasgow was beaten out of the field by American competition. Irish meat cannot be produced to sell so cheaply as American, Australian, or New Zealand meat. But the important fact must not be forgotten that for the purpose of transit Irish meat would not have to be frozen, but merely kept cool. It should, therefore, have the same preferential

place in our markets as English and Scotch meat ; and we doubt not such would be the case. The Irish producers would get just as much for their cattle and sheep as they do now ; the trade would grow enormously under the improved conditions (for Ireland could produce three times the amount of her present export) ; and the raw materials of many an industry would be retained in the country.

It is the middleman that blocks the way. How is he to be got rid of—or, at any rate, how is his veto upon a dead-meat trade to be broken down ? We cannot confiscate his mortgages or annul his contracts ; but perhaps we can gradually render him unnecessary. There already exists, in the case of butter and other commodities, a plan of dispensing with his services. Agents of the railway companies—canvassers for traffic—attend the fairs and markets, and, on receiving a parcel for consignment to the purchaser in London or elsewhere, give the sender a sort of shipping note or bill of lading, upon which he can go to a bank and get an advance to the full value of the goods. Before the goods have left the market he can thus get the money for them, and he is at once able to

lay his capital out again to the best advantage. Of course the railway companies take care not to deliver up the goods until both freight and value have been paid, and the system is said to work well. Might not some means be found of making it generally available? Gradually the thrifty grazier would get out of the salesman's debt and pocket the salesman's profits.

The pig and pork trade stands on a different footing, most of the pork being exported cured. In that form it is practically imperishable. But the present live-pig trade might be turned into a fresh-pork trade on the lines indicated above for beef and mutton. With regard to hams and bacon, we need do no more than impress upon the Irish producers the necessity of keeping up the quality and improving their methods. They need then fear no competition whatever.

Ireland has unexcelled facilities for the production of animal food. Her well-watered and sheltered grazing lands are the admiration of all who see them. The tendency in Ireland, as in England, is to put land out of tillage and lay down grass. In view of this tendency, of the ease with which a gigantic meat trade could be created, of

the needs of England and the needs of Ireland, surely the suggested means might be adopted. We should then see the Irish grazier prosperous ; while the eyes of the Londoner might be gladdened by the sight of prime Irish beef or mutton at 9*d.* per pound.

## CHAPTER IV.

## THE BUTTER TRADE.

Annual Output—Danger of Extinction—Foreign competition in better methods—Bad Management of Irish Cows—Bedrooms as Dairies—How Irish Butter goes to Market—Unwholesome Pastures—Comparison of Prices—State Dairy-Farms Abroad—Irish Milk-maids—Improvement of Transport—Butterine—The Cork Butter Market—Good prospects with better management.

THE annual output of butter in Ireland is estimated at the value of not less than six millions sterling, though here, as in the case of almost every other industry, there is an entire absence of authentic returns. It is, at all events, sufficiently obvious that the making of butter is one of the great national industries of Ireland. This arises from the fact that butter-making is also one of Ireland's great natural industries. So far as soil and climate go, Ireland as a dairy-farming country is favoured far beyond any of the countries of Europe. Yet this great industry is on the very verge of extinction. In a few years it is feared that all the dairy-farmers of Ireland will be ruined. They are being beaten out of the markets in which they once enjoyed an



almost absolute supremacy. Denmark, France, Germany, Belgium, and Sweden are all far ahead of her. In certain markets Irish butter is wholly unsaleable. Even in Dublin the butter imported from Denmark has taken the lead. In the English market, Irish butter is at the lowest standard in the estimation of the trade. So serious a state of things makes the question of the future of this industry not only of great but of vital importance ; and it may be said generally that, although in its wider aspects the question is simple enough, in its details it is one of great complexity and difficulty. Indeed, the reforms it is necessary to introduce, if the trade is to be preserved from extinction, are of such a radical character as to render the case apparently hopeless. The breed of milch-cows, the pastures, the method of manufacture, the distributing agencies—all these have to be improved from the very beginning ; and it is a question whether it would not be easier to establish a new trade altogether than to repair and reform the rickety primitive concern that now goes by the name. Anything more unscientific more incongruously placed in a period of extraordinary industrial and commercial progress, it would be impossible to imagine.

While dairy-farming in every other country has made amazing strides, in Ireland it has stood stock still. The methods of sixty years ago are employed to-day. Cows calve according to their own sweet will ; they are turned out to graze upon deteriorated pastures, full of mosses and plants that produce barrenness and abortion ; and while they are thus poisoned in summer, they are half starved in winter. There is hardly such a thing as winter dairying in Ireland, although it is evident that winter offers the best opportunity of earning good profits. The result is that the average yield of an Irish cow, which ought to be 200 lb. of very superior butter per annum, is only 123 lb. of very inferior butter. To make the matter worse, the cows are frequently fed upon mangolds and turnips, which so unpleasantly flavour the butter that excessive salting is necessary in order to conceal the fact. Then, the milking is done in an unsystematic and wasteful way, and, when the milk is obtained, the preparation of butter from it is performed after a fashion that hardly bears relating. In the vast majority of cases the farmers use their ordinary dwelling and sleeping rooms as their dairy-rooms. You may at any time walk into the house of a

well-to-do Irish farmer and find the milk placed all round the bedroom to set for cream. After the cream is set it is churned—never mind how ; and when, finally, the butter is made, it is salted to an extent which really amounts to adulteration, is dripping with water (20 per cent. of water is not uncommon), and is generally in a sloppy and greasy condition. Eventually it finds its way to the market, either in lumps tied round with a cloth, or in a dirty firkin ; after which it is transported to England or elsewhere in vessels which have perhaps just discharged a cargo of coal or paraffin. Can it be wondered at that Irish butter fails to hold the field against the well-worked, fresh, clean butter sent over in neat little rolls from Normandy, or in hermetically sealed tins from Denmark ? Why, even butterine is preferred to the second grades of Irish butter. When Colonel Saunderson lately stated in the House of Commons that the butter sold at Cork for 6*d.* a pound was chiefly used for the adulteration of butterine, he might have been speaking the literal truth, although the remark was treated as a joke at the time. Thus we see that the breed of cattle is bad ; the pastures are badly managed and fertilized ; there are no suitable dairy

buildings ; there is great ignorance of proper methods ; there is a total absence of the necessary mechanical appliances, and there is an absolute indifference as to the conditions in which the finished article finds its way into the market. If matters go on like this another year or two it will surprise no one to find that dairy-farming must be abandoned in Ireland.

Reverting to the undoubted fact that the "green isle" is pre-eminently suited for this industry, and bearing in mind the above rapid survey of the scandalous way in which it is carried on, let us refresh the mind with a few figures. In 1848 379,000 packages of Irish butter entered the port of London as against 576,888 of foreign butters. In 1884 the Irish packages had fallen to 5,168, while the foreigners had risen to 1,703,772. The average prices of foreign butter in the London market are : Danish, £6 10s. per cwt. ; German, £6 ; Belgian, £5 3s. 6d. ; French, £5 12s. 6d. ; Swedish, £5 14s. 6d. Now the average price of Irish butter is only £4 19s. 3d. for what is called salt butter, and £5 11s. 6d. for mild cured butter, of which very little is made.

How is this deplorable state of things to be

amended? The obvious answer is, by putting right in detail everything which is wrong. But how is the breed of cattle to be improved? How are the pastures to be transformed from bad into good feeding? Who is to teach the Irish dairy-maids how to make butter and provide them with proper appliances? In England these changes are brought about by the co-operation of the owning and the occupying classes. The owner gets up a dairy show and gives prizes; he encourages an industrious tenant by putting up suitable buildings on his farm; he assists him to improve his grass-land by protecting him from people who would otherwise swindle him with worthless manure or worse than worthless seeds; he takes a personal interest in the improvement of breeds, and is always ready to give his tenant the benefit of his experience or of his resources. But there is nobody to do all this in Ireland. The landowning class has been all but destroyed, and the fragment that remains has neither the will nor the power. We will not go into the question whether the present evil arises from this process not having gone far enough—whether the true remedy is to be found in the complete destruction of landlordism. That is a

matter beyond the scope of the present inquiry. The fact remains that in regard to these reforms, which are necessary to their very existence, the Irish dairy-farmers cannot help themselves, and have nobody to help them. At the same time we are not going to fold our hands and say that nothing can be done.

In Russia, Denmark, Sweden, Belgium, and Finland this very question has been taken up by the State. In all the dairy districts model State farms have been established. The very best breeds of cattle were imported, and by further crossing were acclimatized and strengthened. The herds thus created became the source from which a highly improved strain was eventually imparted to all the herds throughout the country. Strict attention was given to the greatest possible utilization of the cow as a milk-producing machine. We need not go into details; but at all events the arrangements were such that the cows, after being brought to the highest perfection as milk-producers, yielded their best supply at the time of year when it was most valuable. Then the latest methods of butter-making were introduced, and, finally, care was taken to put the article into the market in a whole-

some, attractive, and tempting condition. In short, butter production was put on a thoroughly scientific basis. The thing was done as well as it could possibly be done. The result has been to enormously increase the quantity produced, to raise the standard of quality to an unprecedented pitch, and to sweep away at a breath the poor competition of the Irish firkin. In Finland, within ten years, the output was exactly doubled, and the price was raised to two and a quarter times its former figure. It seems a bold thing to suggest that the State should do the same thing in Ireland. With our natural repugnance to State interference it seems odd to contemplate a Department of the Government engaged in breeding calves for sale to dairy-farmers, in lending money to them for buildings and appliances, in testing manure and seed, and in instructing dairy-maids. Under happier political auspices all this might be done by private agency. Yet, perhaps, the political faults of Ireland should not deprive her wholly of the help she so sorely needs.

One or two things at least we might do without outraging our established doctrines of the functions of the State. To begin with, we might provide

the means by which the daughters of Erin would be made really good milk-maids. An experiment, sufficiently encouraging, has already been tried. There exists near Cork what is called the Munster Dairy School. Girls are received there and well taught the best processes. About three hundred girls have already been turned out, and eighty girls are passed through the school yearly. All these are eagerly sought after by dairy-farmers not only in Ireland, but in England and Scotland, and command good wages. They stay at the school for two months, and are required to pay £3 for board and expenses. The value of the produce of the cows owned by the school is so great that in a very short time it will be self-supporting: meanwhile the deficiency is made up by a guarantee fund locally subscribed. The Cork girls have been remarkably successful in winning prizes at competitions in Dublin, London, and Birmingham. Surely such establishments might be multiplied all over Ireland at no great expense. The benefits springing from them would be enormous. There would be an immediate increase in the yield of butter from the same quantity and quality of milk as the Irish dairy-maids now manipulate. If to



the instruction of the dairy-maids were added the instruction of the farmers as to the management and feeding of their stock, it is calculated the output of butter in Ireland, even with the present inferior breed and the lack of buildings and appliances, could be raised from six millions to twelve millions annually, while the quality of the butter would be so greatly improved that it might face the competition of the finest Danish. These seem to be objects worth striving after and not unattainable.

A further suggestion is that the State should use its influence to obtain an improvement in the means of transport. First, the rates should be revised. It costs more to send butter from Ireland to England than from any of the butter-exporting countries of Europe. Secondly, more suitable conveyances should be provided. On the Continent they have special butter-trains; the Irish railways might at least have special butter-vans, properly fitted, well ventilated, and, if necessary, artificially cooled. Steamers should be prohibited from mixing up firkins of butter with barrels of paraffin or bags of guano. More stringent laws might also be passed to protect Irish butter from butterines and other

compounds, now fraudulently sold both wholesale and retail to an extent almost incredible. Beyond this we do not see how the State could interfere. To revolutionize the character of Irish milch cattle is a work involving a vast deal of expense and time ; to put up buildings on private land is out of the question.

In some other matters the Irish dairy-farmers might do something for themselves. Ireland throws away from £100,000 to £200,000 a year in importing oak for the manufacture of butter casks, although beech, of which there is abundance in the island not at present worth cutting, is much more suitable—that is, whiter and cleaner—although we believe butter keeps longest in oak. The shape of the casks should also be altered, so that they could not be moved by rolling. The best descriptions should not be exported in casks at all, but in pats or rolls, or in hermetically sealed tins. These may seem small matters, but they have a great deal to do with the saleableness of the article. Who would buy a dirty egg ?—yet everybody knows that the appearance of the outside does not affect the quality of the inside. Again, every effort should be made to raise the standard of butter in

the Cork butter market. The trustees of the market do not appear to do their duty as they should. With an income of £7,000 a year they might do much to improve the methods of production, and so be enabled to raise the tests of quality. Their brand should be a guarantee of excellence ; at present it is the reverse. If only these few suggestions were adopted, great progress would be made. The capacity of Ireland for butter production would not be developed to its highest point, but there would be an enormous improvement, the naturally superior flavour of Irish butter would assert itself, and the output would be greatly increased ; whereas at present the output is shamefully meagre, the flavour is smothered with salt and water, and the appearance spoilt by careless packing and handling. The manufacture of butter is the one industry in which Ireland can indubitably take the lead. There has been neglect—inexcusable neglect—in the past ; but it is not yet, we trust, too late to repair the mischief. To see this great industry collapse while there appears a hope of saving it would be like seeing a ship founder within sight of land.

## CHAPTER V.

## THE FISHERIES.

Abundant Supply of Fish—Boats, Nets, and Piers wanting—Curing-houses—Different Classes of Boats needed—Effect of the Kelp “Boom” on the Fisheries—The Irish Railways and the Fish Trade—Suggested Railway Scheme for the Connemara Coast—Instruction of Fishermen—An Industrial Fishing School—Loans—Lady Burdett Coutts and Baltimore—The Fishery Commissioners and County Clare—Bounties in Former Times—Oyster Cultivation—Mussels and Periwinkles—The Fresh-water Fisheries.

A COAST-LINE of about 2,000 miles, broken into an exceptionally large number of excellent harbours ; waters teeming with fish, many of them being among the very finest of their kind ; a race of hardy and adventurous fishermen : all these natural advantages for carrying on a great fishing industry exist in Ireland. As if to mark the island out as a special field for gathering in the harvest of the sea, Nature has placed her best harbours where there are most fish. The eastern coast, with Strangford Lough as the only good harbour between Belfast and Waterford, comes far behind the western in its yield ; while all round the

south-west, west, and northern coasts, where the sea makes deep incisions into the land every few miles, the waters swarm with cod, hake, ling, mackerel, and herring. The south-west coast is especially prolific, and occasionally there is almost what one might call a "miraculous draught." On the west coast there is also abundance of fish. Outside Arran Island there are magnificent banks ; nearer land, in Galway Bay, the fish would be plentiful if trawling, which destroys the "cover" and which ought to be practised only in deep water, were prohibited ; off the coast of Connemara there is so much fish (and so bad a market for it) that tons are annually thrown upon the land for manure ; round the island of Bofin the sea has often been actually "roughened with fish" ; Clew Bay is a perfect "stew" ; Broadhaven and Blacksod Bays, in county Mayo, are so landlocked that boats could go out and make a haul every day in the year ; Carew might have referred to Donegal Bay when he wrote of his "fishful pond." Yet these great natural advantages are thrown away. Scotland, with a coast-line only 500 miles longer than that of Ireland, with fewer harbours, with less fruitful and more tempestuous seas, supports by

her fisheries one-seventh of her entire population. Ireland supports less than one-two-hundred-and-fiftieth.

Far from there being any difficulty in explaining this state of things, the reason of it is simplicity itself. The fish are there, waiting to be caught ; the men are there to catch them ; and Ireland herself has plenty of open mouths ready to receive them. But the means of catching the fish—boats, nets, and piers—are wanting ; there is a plentiful lack of curing-houses and apparatus ; and practically no provision has been made for transporting the fish, when caught, to the most suitable market. That is why the Irish fishermen, besides being one of the smallest, are one of the poorest sections of the population. First let us see what they want in the way of boats. Of craft suitable for near-shore fishing they have plenty. Each family has at least one boat ; some families have three or four. They are called third-class boats ; very few of them are decked ; and they are quite incapable of facing the tumult of the best fishing waters thirty or forty miles off the coasts. For this purpose 30-ton decked boats, costing from £200 to £400 each, are necessary ; and for lack of them the deep-sea

fisheries of the west of Ireland have practically to be abandoned to the English, Scotch, Norwegian, and Dutch fishermen—estimated to number not less than 100,000—who annually flock to the enormous shoals which extend in an almost unbroken line from Bantry Bay to Bloody Foreland. The boats at present in use along the west coast are home made, and are excellent of their kind. Where larger boats exist, they have generally been built at Peel in the Isle of Man ; but there is no reason why they should not be built at home, and this would in itself provide Ireland with an important industry. Then with regard to nets and gear. It is a very surprising fact that net-making is but little understood or practised among the fishing population of Ireland. In Scotland, on the east coast of England, on the south and the Cornish coasts, the women make nearly all the nets and the men make the rest of the tackle. It supplies them with something to do when the weather is bad or fish are scarce. But it is not so in Ireland. The consequence is, that, having to buy all their gear, Irish fishermen can only afford a very inferior quality, or gear which is quite inadequate to the needs of the Irish fisheries. At one time,

in many places, they were much better provided ; but kelp happened to rise from £5 to £7 a ton ; then they stopped fishing, neglected their boats and their gear, fell out of practice, and now, with kelp down to £3 a ton, they are without the means of recovering the ground they have lost. On one occasion—in 1884—the coast and creeks of Connemara swarmed with herrings for three months. They came up quite close to the land, where they had never been seen before ; but for lack of nets the fishermen could not catch them. What should have been a little fortune to them—as free a gift of the sea as the rain is of the clouds—rose tantalizingly before their eyes and then passed away.

But of course neither willing hands nor boats nor gear avail if the yield of fish cannot be quickly and safely taken to land, and from thence despatched to market ; and this is really the greatest difficulty to be faced. It is all very well to say that if railways were only constructed between the Irish fishing stations and places where they would either be consumed or bought for export the fisheries would flourish ; but while the cost of the enterprise would be enormous and certain, the



return might be small and precarious. Similarly with piers. Nothing can be a plainer fact than that they would cost money. At the same time, here we have the specific allegation by people who ought to be well informed, that a great source of wealth lies undeveloped because its produce cannot be brought to market ; and the question arises whether the problem can be solved, even partially. Without going exhaustively into the transit question at present, we may say generally that the subject of developing the fish trade might very well be taken up by the Irish railway companies. Hitherto they have provided no facilities beyond running a few fish-vans with their ordinary goods trains (we refer now to salt-water fish, and not to salmon). This is no encouragement whatever. Fish-vans ought to be run with passenger trains, and branch lines, or tramways at least, should be run to a number of points along the coast. Thus much we may expect the railway companies to do in the interest of their own property ; but we do not exclude the possibility of State aid being given in exceptional cases. One such instance may be mentioned. A railway from Clifden in Connemara to Galway would drain all the fisheries

of the Connemara coast. Its length would be about forty-nine English miles, and it could be constructed for less than £180,000. It would pass through a defile the whole way, and the land could be obtained for next to nothing. Surely such a line would earn £9,000 a year, and that would pay 5 per cent. on the capital. The State might guarantee a return to that amount, without involving itself in an absolutely ruinous liability. We have been doing this sort of thing in India for years, with enormous advantage to the country ; and if in India, why not in Ireland ? The necessity for better means of transport is proved by the fact that, with the exception of lobsters (which can be sent alive), no fish from Connemara is sent even to Galway ! Now, lobsters can be had on the coast for 3s. 6d. to 5s. a dozen, and herring, cod, turbot, and other fish for almost any price which will enable the fishermen to live.

With regard to the piers, they are wanted because the creeks and harbours run too far inland. Harbours of refuge are not necessary—only convenient landing-places. These would not be costly, and the interest of the money could easily be paid out of the increased products of the

fishery. The State would have to advance it in the first instance ; and past experience encourages the belief that the repayment would be made with scrupulous honesty. Money must also be found for boats and tackle. If it were spent on the spot all the better. There are plenty of boat-builders, and almost enough wreckage comes ashore to supply timber ; while as for the nets, the women should be taught how to make them. It would also be a great advantage if the men were instructed in the use of the improved appliances put into their hands ;\* while much good would be done if a chart

\* Upon this point the Rev. Charles Davis, P.P., of Baltimore, County Cork, wrote :—"Will you kindly allow me to draw attention to one matter which deserves paramount notice. It is the want of skill, of all knowledge of the better systems of fishing, which prevails amongst our coast population. Only in a few places are first-class boats to be found, and it requires time and patient labour to acquire the skill to manage them. The nets now in universal use are made by machinery. There is not a single machine in Ireland, nor is there a fish-curing establishment worthy of the name on the entire coast. Hence an immense loss in fish actually cast overboard each year for want of any means of preserving it. The same may be said of all the industries subsidiary to fishing. A few of us, deeply interested in the development of the Irish fisheries, are seeking to apply a remedy through the operation of the Industrial Schools Act. We are now engaged in erecting school-buildings and workshops which will accommodate at

of the west coast fishery banks were constructed. There does not exist a single chart on which either the inshore fishery banks, to say nothing of the deep-sea fishery banks, are laid down. The consequence is that the men do not know where to go for the fish. Another suggestion is that the Government should follow the example of America in the scientific study of the Irish fisheries, especially with regard to the migration of fish, the necessity of a close time for the various species, and so on. Finally, there would have to be, as part of all these improved arrangements, an ex-

the outset 150 boys, who will receive practical instruction in the modern systems of fishing and the attendant industries. First-class fishing-boats will be attached to the institution, and boys will be eligible from all parts of Ireland. The Government has promised a Capitation grant when the necessary buildings are completed. For this purpose we have received a grant of £1,000 from the county grand jury, and—including £200 from the Baroness and Mr. Burdett-Coutts, and a like sum from the trustees of the Cartery estate—close on another £1,000 by public subscriptions. But this sum falls far short of what will be required for the completion of the buildings and the necessary machinery, with the cost of competent instructors. We can only appeal for assistance to all who wish to revive this great national industry. The trustees of the school, to whom subscriptions may be sent, are the Right Rev. Dr. Fitzgerald, Skibbereen; the Hon. W. Evans Freke, Glaston House, Uppingham; Sir T. F. Brady, Inspector of Fisheries, Dublin; and your humble servant."

tension of the telegraph to the fishing-stations, in order that they might be advised promptly of the state of the market in Dublin, in Liverpool, in London, and other centres of consumption.

One word upon the question of loans. In every case in which money has been advanced for the development of an Irish fishery the result has been singularly satisfactory. Lady Burdett-Coutts had at one time £10,000 out on free loan in the town of Baltimore, and repayments have been unfailingly punctual; while Baltimore itself has grown into a great fishing-port. Fifty times that amount has been advanced in the aggregate at other places by various persons, and it has all been repaid. The Fishery Commissioners advanced £20,000 in county Clare, and only £30 remained unpaid. The general result has been to enormously increase the fishery trade of the south-western counties—Cork, Kerry, and Clare—as well as to create other trades which depend upon the fisheries. When we consider the financial problems involved in this question, we must not forget that in former times we even had recourse to the bounty system. In 1819 there was a bounty given for fish taken, for fish cured, and for boats built. That ceased when

the Fishery Commission ceased ; but whereas in Scotland the fishermen had enjoyed the bounties for about three-score years, and had been firmly put upon their legs, the Irish fishermen enjoyed them only for three years. This is one of the most clearly defined of Irish grievances. So is the grant at that time of a distinct brand to Scotland, while one was denied to Ireland. Thus the past history of the Irish fisheries not only supplies a justification of State help being given now, but even establishes a claim.

We have already spoken of lobsters obtainable in Connemara at 3*s.* 6*d.* to 5*s.* a dozen. These shell-fish abound on almost every part of the coast, and are easily transportable. Oysters used also to be abundant, and are still successfully cultivated in certain places. The Sligo estuary is said to be peculiarly suitable. The French oysters now cultivated with so much success in Arcachon originally came from Ireland. They cannot now be restored, for they have become acclimatized to a warmer temperature than that of the Irish waters ; but species of a hardier nature might be brought from America and Norway. The matter would, however, have to be taken in hand by the

Government, which alone could procure the proper kind of seed, reconcile the conflicting interests which would assert themselves as soon as anybody attempted to utilize the foreshore, and institute and enforce the necessary prohibitions against improper dredging. We need hardly say that successful oyster cultivation is one of the best-paying industries imaginable. It is believed by men of practical experience that in Ireland it might be made to yield a profit of millions every year. The less aristocratic but still succulent mussel, and even the humble periwinkle, might also be made sources of revenue. It was an Irishman named Walton who first introduced mussel cultivation into France, where there are now regular mussel-farms worked on his principle. He first lived by netting wild fowl, and he found that on the poles to which his nets were fixed the mussels which had attached themselves were larger and fatter than those on the mud; he therefore took to erecting poles, and since then the trade has grown to such an extent that the mussel-farms are now supporting three independent communes—Charvron, Esnandes, and Marsilly. All that is necessary is, to fix up poles and put

wattles between them. As for periwinkles, as many as ten tons—gathered from the rocks by the children on the Galway coast—have been sent from Oranmore to the London market in one day.

Not much need be said of the fresh-water fisheries. A large quantity of salmon is taken in Ireland and exported. So far as concerns sea-salmon, what we have said respecting the sea fisheries generally applies to them. The river-salmon are abundant, and might be made more so if the streams were planted along the banks, so as to afford shelter to the fish and to the flies they love to feed upon. There is very little river pollution in Ireland; the only case we have heard of being the River Avoca, in Wicklow, where the drainage from the lead and sulphur mines poisons the fish. The profit from the Wicklow salmon fisheries amounted, before the mine-waters were introduced into the river, to £19,000 a year; and if, as is alleged, £6,000 or £7,000 would construct a separate channel for the mine-waters, and restore the river to a condition in which the growth of fish could be resuscitated, it certainly seems desirable to try the experiment. Even in regard to a valuable fish like salmon, however, much would still have to be done



---

to cheapen and quicken transport in order to get the full advantage out of the supply. Indeed, the Irish fisheries, in every branch of them, from oysters to periwinkles, and from salmon to pilchards, like almost every other Irish industry, need reforming from the beginning to the end. The natural resources are there ; but everything else is wanting. One might say as much in this respect of New Guinea as of Ireland. Indeed, the only difference is that New Guinea is farther from us and is inhabited by savages.

## CHAPTER VI.

## PLANTS USED IN MANUFACTURES.

Flax—Decline of Cultivation, though the Demand has risen  
—Foreign Flax—The Writing on the Wall—Room for  
Threefold Development—Difficulties to be overcome—  
Value of a Model Flax-Farm—The After-manufacture—  
Central Retteries—Flax-growing in Munster and Connaught  
—Hemp—Straw—Osiers—Tobacco—Beet—Kelp.

PASSING now from the group of food-producing industries, we come to the growth of crops which can only be regarded as the raw materials of trades having in themselves little or no connection with the soil. Thus we still keep within the range of agricultural operations, but look over the boundary into the great field of arts and manufactures. Primitive agriculture is exclusively concerned with the production of food. A more advanced agriculture—by means of greater capital, skill, and forethought—provides us with the materials for raiment, like cotton; for prepared foods, like sugar; for artificial drink, like beer; and for various indulgences difficult to classify, like tobacco. At this point Agriculture and Manufacture meet and

separate. It is at once the connecting link and the dividing line.

So far as Ireland is concerned, the foremost of these descriptions of crop is undoubtedly flax. Ireland has a great linen industry, and to this the cultivation of flax is due. But for the linen-industry, flax would long ago have gone out of cultivation: as we may infer from the fact that it now is grown only in Ulster, whereas formerly flax-fields were not uncommon in Munster and Connaught. Curiously enough, while linen-weaving has increased in Ireland, flax cultivation has decreased. At one time Ireland grew flax enough to supply all her looms. By-and-by Dutch and Belgian flax was called in to fill up the margin caused by the increased demand. The Irish flax-growers, instead of being stimulated into renewed exertions by the appearance of the foreigner upon the scene, became indifferent, and said "flax-growing did not pay;" the result being that while this important industry has steadily declined in Ireland, the markets it ought to have supplied are filled to a greater and still greater extent every year with the produce of Holland, Belgium, Germany, Russia, the East Indies, and other

countries. At the first breath of competition the Irish grower gave in, when he might have "held the field." Foreign flax first came in because the linen industry outgrew the home production of its raw materials. The home producer ought to have been equal to the occasion, but he was not. On the contrary, he took the appearance of foreign flax to be a sort of writing on the wall; and muttered "Kismet" as he resigned himself to the decree of an irresistible destiny. We need hardly say what would have happened had there been no home demand. Flax-growing would simply have become extinct. Luckily it is still an important industry in Ulster. But why should it not be extended again into Connaught and Munster? Why should not Ireland herself supply the £3,000,000 worth of flax which now comes from foreign countries annually to feed the linen-mills of Belfast and Derry, the damask-loom of Lurgan and Armagh, the hand-loom of Fermanagh and Tyrone?

Less than 15,000 tons of flax are grown in Ireland every year, and it is worth £700,000. There is no reason why this yield should not be trebled in quantity and quadrupled in value. The soil and climate of Ireland cannot be excelled for

the production of flax ; and even three times the present yield would still leave the linen-mills largely dependent on the foreign article. There is a steady home demand for every pound of flax of home production. But flax is a "kittle" crop. It is more difficult to grow than barley or oats ; it is terribly exhausting to the soil unless a proper rotation is observed ; it requires at all stages skilled treatment ; and the return from it is slower than from any other crop. Indeed, flax is the very converse of the potato. Everything that the potato is, flax is not ; and *vice versa*. That is the real difficulty. As we enter upon the consideration of the problem, let us buoy ourselves up with the cheering fact that Irish flax, when well grown and well prepared, is among the finest in the world—is always sure of a market and of a high price. It fetches £50 a ton even now ; it ought to fetch £70, which is the average value of the Belgian variety ; and we need hardly say that a crop readily saleable at a profit of £20 per acre would put many an Irish farmer on his legs again. The question is, How is it to be done ?

Let us first take the case of Ulster, as presenting fewest difficulties. The objection that meets us at

the outset is a very general one. We are told that flax is not a ready-money crop, and that the delay in realizing it is fatal. But we may perhaps assume that this objection may be disposed of by the means suggested in the case of other industries which require time to develop—in other words, that the necessary capital may be found somehow. The next step is to teach the farmer, not so much how to grow the flax—he understands that pretty well—but how to get the full value out of it when grown. The establishment of a model flax-farm would work wonders. There the farmers would learn how to economise the resources of the soil, how to gather and steep the flax, and, in short, how to carry on the preparation of the flax for the spinner. Or, it might be that the farmer might find it to his advantage to drop the after-preparation altogether, and sell it in a green or merely dried state to persons skilled in its after-manufacture. That would create an entirely new class of workers in Ireland, and would be an imitation of the plan so successfully adopted in Belgium and Holland. The great thing is to have the work well done, whereas at present it is very badly done. There is a general agreement that the best plan

would be for the farmer to devote himself to bringing the plant to the highest standard of excellence and drying it after pulling, so that in that early stage of preparation it could be conveyed safely to a rettery established in a central position and where suitable water could be had. This would enable the seed to be saved (it is worth from £8 to £10 per acre, and is now wholly lost in Ireland), and would ensure the best possible preparation of the flax for use by the spinner, while relieving the farmer of the most troublesome part of the process. He would really have no more trouble with his flax crop than with his hay crop. More attention would have to be paid to its cultivation, so as to prevent the exhaustion of the soil ; but, on the other hand, there would be a quicker return.

With regard to flax-growing in the other provinces, no doubt its revival would be a matter of great difficulty. We should not recommend it at all, but for the existence of a large and steady home demand. What we want to stop is the anomaly of an enormous import of flax into a flax-producing and flax-consuming country. To carry flax to Ireland ought to be as absurd on the face of it as carrying coals to Newcastle. Now, Munster

and Connaught have both grown flax profitably in past times, and of a somewhat finer fibre than is grown in Ulster. Why does not somebody try the experiment? It is useless to advise the farmers to grow flax. You might as well advise them to grow oranges. You must show them that to grow flax will pay. You must give them practical demonstration of the soundness of your proposal, and then they will follow suit. With this must be combined facilities for realizing the crop in a dried state, as we have suggested in the case of Ulster. Possibly flax-culture may never become a really great industry in the southern and western provinces; but "every mickle makes a muckle," and a profit of £20 an acre is worth winning, even upon a single acre.

Hemp is not at present grown in any part of Ireland. But as the moist nature of the climate of Ireland makes it peculiarly suitable for the cultivation of fibre plants, there seems no reason why something should not be done with hemp. Ireland used to be renowned for its excellent ropes and sail-cloth, and a considerable manufacture of them still exists; but the hemp is imported from Russia, Germany, Italy, Manila, and New Zealand,



—the last-named, however, has of late gone out of favour. The south and west of Ireland are most suitable for hemp cultivation. While we are on the subject of fibrous plants, reference may be made to the employment of straw otherwise than as food or litter. Straw-plaiting and the making of straw envelopes for bottles might be profitably undertaken and would use up a great deal of straw that now goes to waste. Careful gathering and preparation would of course be necessary ; but, considering the great amount of waste that takes place now and the enormous import of straw envelopes for the spirit trade of Ireland, there would certainly be an adequate return. Allied with this industry is basket-weaving, to which the physical characteristics of Ireland and the circumstances of the people are admirably adapted. Osiers might be planted round the fringes of the bogs and on a vast extent of low-lying land along the river-courses. That this has not been done long since, and that Ireland has all along imported baskets for her own use instead of exporting as she might have done, is part of the general neglect of opportunities which has characterized the country. Willows begin to return income after three years, commencing with a

value of from £2 to £3 per acre, and then gradually rising to as much as £20 per acre. Thus, considering that the available land is now waste, the landowner and planter would benefit, while osier-weaving would grow into an important industry for the poor agricultural population. Indeed, we know of no "cottage industry" which promises better results.

We shall, of course, be expected to say something about tobacco culture. The prohibition of the growth of tobacco in Ireland dates from 1832, up to which time the well-known clause in the Act of Union was in force. That prohibition has been made a standing grievance ever since, and we have been reminded again and again that in 1831 Ireland was producing one-fifth of the whole of the tobacco consumed in the United Kingdom. Put in this way, the statement exaggerates the extent of the industry, which was never very great or valuable, and is in our latitude notoriously precarious. No doubt, tobacco could be grown in Ireland; but we question whether any Irish farmer could be induced to embark in such a speculation. Somewhat similar in character is the cultivation of beet-root for manufacture into sugar. Upon this question

there is much confusion of ideas. Because beet can be grown in bog-land, and because Irish beet has yielded 11 per cent. more sugar than Continental beet, people rush to the conclusion that this one root is to be the salvation of Ireland. It would be just as much to the purpose to compare the Irish with the German potato in regard to its spirit-yielding qualities. The point to consider is, what will the yield of sugar per acre be, and is the superiority of Irish beet (if it exists) sufficient to overcome the fiscal disadvantages under which the manufacture of sugar is being carried on in the United Kingdom at this moment? We confess we see no prospect of fortunes being made out of beet cultivation in Ireland. The experiment would be costly and hazardous; and one failure would destroy the good effect of half a score successes. If beet is grown at all, it must be for feeding cattle—especially milch-cattle, for which it is peculiarly suitable. More might be hoped for from the cultivation of crap and other plants from which valuable dyes are produced; but this is a matter at present somewhat obscure.

There only remains to be considered under this heading a substance which, although derived from

a plant, can hardly be regarded as a product of cultivation : we refer to kelp. Kelp is the fused ash of seaweed, and is really a very wonderful article. It yields, under various methods of treatment, soda salts, potash salts, iodine, and bromine. Saltpetre and common salt (the latter superior to rock-salt) can be made from the potash salts ; from the iodine you get resublimed iodine, and the iodides of potassium (worth 12s. a pound), sodium, ammonium, calcium, iron, cadmium, mercury, lead, zinc, arsenic, and sulphur. From bromine you can manufacture the bromides of potassium, sodium, ammonium, hydrogen, lithium, calcium, iron, cadmium, arsenic, zinc, quinine, and strychnine. Moreover, a substance called "algine" has been extracted, the uses of which are almost infinite. It will size fabrics, it will prevent the incrustation of boilers, it can be used for covering boilers, or it can be eaten. Now, hundreds of thousands of tons of seaweed are cast up on the shores of Ireland—especially on the west coast—every winter. The application of iodine to photography and other arts, and of bromine to medicine and also to arts, gave a fillip to the kelp industry some years ago ; and the coast people took to gathering seaweed and burning it,

the ash being then saleable at no less than £7 per ton. But, unfortunately for them, a better source for iodine was found in Peru; potash salts and bromine have been discovered in large quantity on beds of common salt in Austria and Germany; and there are some mineral waters in America which also contain large quantities of bromine. Kelp has consequently fallen to £2 per ton; it does not pay at that rate to gather and burn the seaweed; and there is now no kelp manufactory in Ireland at all. Unless, by improved methods of extracting the salts, the bromine, and the iodine, kelp can be made to yield greater quantities of those substances than it has ever done before, seaweed cannot again be reckoned among the industrial resources of Ireland. It is not even on a par with what a Chinese gold-digger would consider "pay-dirt." If we may be excused an Irishism, it represents valueless value, like treasure at the bottom of the sea.

Still, the case is not hopeless. Professor Gallo-way, M.R.I.A., has suggested a plan for the profitable employment of seaweed. Instead of burning it he would char it, thus saving all the iodine, which by burning is half wasted. Then, instead of selling the crude iodine and crude bromine, he would

manufacture them upon the spot into their highest commercial products—that is, into the iodides and bromides enumerated above, and which have so high a market value. He estimates that from one-third of the weed procurable from the west coast of Ireland about 500,000 lb. of iodine could be made annually, besides the potash salts and bromine. But of course a very large capital would be necessary for erecting and working such a factory ; and the only substantial data we have for forecasting the result consist in the fact that seven such factories are now working in France, while the chemical utilization of kelp is being profitably carried on in Scotland. The scheme is one which, if successful, would enormously benefit Ireland by giving remunerative employment to the very poorest class of the population and by the introduction of a new form of skilled labour ; but it is clearly a case in which help must come from outside. More than this, the help must come in the form of private enterprise. It would be too much to expect the State to embark in business as a manufacturing chemist, even for so large a purpose as turning to profitable account the autumn leaves shed from the deep-sea groves.

## CHAPTER VII.

## MINES AND QUARRIES.

Exhaustion of Copper, Tin, Lead, Silver, and Gold—Former Gold and Silver Workings in Ireland—Account of the chief Coal-fields — Castlecomer, Coalisland, Tipperary, Clare, Ballycastle, and Arigna—Two hundred and nine million Tons of available Coal—The Antrim Iron Region—Two hundred and thirty-two million Tons of Ore, yielding Forty per cent. of Metal—Bringing the Coal and Iron together—Difficulty owing to depressed condition of the trade generally—Preliminary Borings—Irish Marbles, Serpentine, and Granites—Importation of Foreign Marbles and Neglect of Home Resources—Irish Granite in the Albert Memorial and Thames Embankment—Prohibitory Railway Rates—Irish Architects and Foreign Materials.

IN this country, when we speak of our mineral resources we are now understood to refer only to coal and iron. For all practical purposes, these are the only minerals left to us. Copper, tin, lead, and silver have at various times been profitably worked ; but Chili, the Straits Settlements, Nevada, and Peru have thrown the British production of those metals into the shade. Even old countries like Spain and Austria compete more successfully than we do with the mineral wealth of the New World.

Except in a few favoured spots, therefore, copper, tin, and lead mining have ceased to be profitable industries in the United Kingdom. Ireland is not likely to lead the way in their revival. She possesses, no doubt, plenty of minerals ; but we are not so sanguine of their practical value as are the persons who refer us back to the time when half-penny-pieces were coined from the copper of Cronebane, and when the peasants gathered gold from the basin of the River Avoca. The statistics of the past are pleasant enough reading. In 1852 Ireland produced 32,220 ounces of silver. Since 1796 a total of about £60,000 worth of gold has been found in Wicklow, including 22-oz. and 24-oz. nuggets. But all that is past now. Gold continues to be found in what is still called the "Wicklow field," but not so abundantly as to justify systematic operations. One such attempt was made by a company, and it got a quantity of gold sufficient to make rings for the directors ; but we never heard that it got any more. Copper and lead mines are scattered over various parts of Ireland, especially in the counties of Cork, Donegal, Down, Galway, Kerry, King's County, Limerick, Longford, Monaghan, Tipperary, Sligo, Waterford, and Wicklow.



Indeed, in 1883 forty metalliferous mines, including the iron-ore mines of county Antrim, were at work in Ireland. But at present, we believe, Wicklow monopolizes the whole of the mining of the country, with the exception of coal and iron ; and we do not see how any early development of Ireland's other mineral resources is possible in the face of the enormous production abroad. The capitalists who might invest their money in Irish mining, on the chance—for example—of political disturbances stopping the export from Spain, would, we fancy, be peculiarly entitled to the old Cornish designation of “adventurers,” now used as equivalent to “shareholders.”

Of coal and iron, however, there is abundance in Ireland. There are seven coal districts indicated on the Geological Survey ; but they may be conveniently classed into six for the purpose of indicating their extent and contents. First in importance is the Castlecomer field, in the province of Leinster. It has an area of 61,440 English acres, and extends over parts of the counties of Carlow, Kilkenny, and King's County. The shallower beds have already been almost worked out ; but it is estimated that the field still contains 118 million

tons of available coal. The present output exceeds 80,000 tons per annum ; but in order to get out the whole of the coal deeper workings will be necessary. Next in importance is the Tyrone (Coalisland) field, with an estimated capacity of 30 million tons, and a present output of about 10,000 tons annually. This field has the peculiarity of being in two tracts, one visible and one concealed—that is, one in which the coal measures come to the surface, and one in which they pass under the new red sandstone and other newer formations. The concealed field is believed to be about double the size of the visible, and is practically untouched. A gallant effort was made to work the lowest of all the seams (the Drumglass) near Dungannon ; but the engines put up were unable to cope with the water which came in from old workings. It is believed that with more powerful engines this mine could be profitably reopened, as the coal is abundant, is of fine quality, and would be readily consumed in the district. Next we take the Tipperary field, containing 24 million tons. The coal is exactly the same as in the Leinster coalfield, but it is only the lower seams which are available for future use, the upper seams being nearly exhausted. Fourth in

extent is the south-western field (Clare, Limerick, Cork, etc.), estimated to yield 15 million tons; then comes the Antrim (Ballycastle) field, with 12 million tons; and finally there is the Connaught (Arigna) field, with 10 million tons. The total contents of the workable Irish coal-fields amount therefore to 209 million tons. The condition of Irish coal-mining may be described in two sentences. The number of mines, of miners, and of tons of coal brought to bank is decreasing every year as the shallow seams are worked out. If there is to be a revival, deeper workings must be driven, as they have to be in England and Scotland. We also have exhausted our first store; but we have gone down (sometimes 4,000 feet down) to the second, which surpasses the first in quality and extent; and it may be that our posterity will have to go down deeper yet, unless by that time something is discovered which will supersede coal, as coal has superseded wood.

Now let us look at the iron resources. Ireland used to be a considerable exporter of iron; and one of the explanations of the fact that the island is well-nigh stripped of trees is that in former times the wood was used for smelting. At all events, there

remain old iron-slag heaps to testify to the existence of an iron industry. The most important field now to be found in Ireland occupies a very large part of county Antrim. There is an area of about 167 square miles containing pisolitic iron ore, with a gross tonnage of about 232 millions, containing about 40 per cent. of iron. The ore can be worked by adits driven into the sides of the Antrim hills, and is, indeed, so worked now to a considerable extent. But, as in the case of coal, the output is steadily declining. It dropped from 231,132 tons in 1880 to 146,452 in 1883, and has dropped still lower since then. Good ore has also been found in the Arigna district of Connaught, but the working of it has been discontinued; and there was also an iron mine in county Cavan for some time. Iron ore exists in other parts, but need not be taken into consideration. When we have made iron-mining in county Antrim a paying concern, it will be time enough to talk of developing the less favoured districts.

Here we have two solid facts, both being of the utmost importance in regard to the future of Ireland—namely, the existence of a vast body of coal just as accessible as much of the coal now

being worked in Great Britain, and the existence of a vast body of iron ore yielding an exceptionally high average of metal. Side by side with these two facts we will put another—namely, that at this moment not a single ton of iron ore is smelted in Ireland. Well may we ask, Why are not the coal of Tyrone and the ironstone of Antrim brought together to provide work for Irish labour, investment for Irish capital, and wealth for the Irish nation? Why leave the coal undug and send the crude ore away to Cumberland, to Scotland, and to Wales at prices which barely pay the cost of mining it? Why does Ireland import pig-iron when she might be bountifully supplied at home? The answer is to be found in the abnormal state of the coal and iron trade. The inflated prices of some years ago so stimulated the supply that the means of production are vastly in excess of the now diminished demand. Very few collieries even in England are doing more than pay expenses. Many of our own iron mines have been abandoned; scores of furnaces have been blown out. Had prices remained at the point they reached in 1873, Tyrone would now be the rival of Lanarkshire, and Antrim of Cleveland. But Ireland's time will

come. A very slight diminution of the English and Scotch output, due to the approaching exhaustion of the coal measures now being worked, would at once bring Ireland into the field. That time may not be very far off. We do not share the late Stanley Jevons's apprehension of an early coal famine in England; but the present enormous output has its limits, and the price of coal in this country has undoubtedly touched its lowest point. It may continue there for some time, but its next move must be upward. They will be "getting" coal in Ireland at 2,000 ft. and 3,000 ft. when we in Great Britain have to go down to 4,000 ft.; and, other things being equal, that would mean for Ireland "a potentiality of becoming rich" beyond even what Dr. Johnson saw in the brewery he has immortalized.

Much will, of course, have to be done if this happy prospect is to be realised at the earliest possible moment. Better facilities of communication must be provided between the Tyrone coal-field and the Antrim iron district; smelting furnaces will have to be erected; prohibitive royalties must be prevented. Preliminary borings might well be made; and in other respects there

might be preparation for the "boom" that is certain to come. The Irish coal and iron trade is not one that can be forced. Coal at 3,000 feet cannot compete with coal at 2,000 feet ; coal and iron separated by one hundred miles cannot compete with coal and iron lying side by side. But let the conditions once become equalized, and Ireland will find that her coal is worth more than diamonds, and that the iron hills of Antrim will bring her greater wealth than the golden vale of Avoca.

An almost equally important section of the underground resources of Ireland is the stone : the beautiful marbles, serpentines, and granites ; the sound fine-grained building stone ; the slate ; the flint, limestone, and chalk ; and perhaps we may include the clay, cement, and salt. All these are to be found, but are at present practically unutilized. Black, grey, red, amber, purple, salmon, dove-coloured, and speckly white marbles abound in various parts of Ireland, and might be worked with profit if transport facilities existed and skilled masons could be obtained. The best black marble in the world is found on the shores of Lough Corrib. Galway serpentine has been famous for generations. A peculiarly beautiful variegated reddish marble

exists in Armagh ; another handsome marble has been very extensively worked at Churchtown and Little Island, county Cork ; while in Kilkenny there are also large marble quarries. There is not much white marble in Ireland, and what there is cannot be used for statuary purposes ; but the coloured marbles are admirably suited for the internal decoration of buildings. Yet large quantities of Italian and Belgian marble—of course cut and polished ready for use—are imported into Ireland. We are aware that numerous attempts to more fully develop the Irish quarries have been made without success ; but that has been due to the perverse practice of Irish architects, and the absence of cheap means of transport. Foreign marbles can be imported at less cost. It has been asserted that marble can be brought from Italy to Dublin cheaper than from Galway. The transport difficulty is, indeed, at the bottom of the non-development of the Irish stone trade generally. If this were remedied, not only would Ireland cease to import stone—except a special variety like Carrara marble or Bath stone, which have no counterparts in Ireland—but a considerable export trade might be done. Some of the marble- and



stone-masons are demanding a duty on foreign finished chimney-pieces, tombstones, etc.; but perhaps that would not be necessary if facilities existed for the cheap carriage of the rough blocks from the quarries to the works. Another point may be mentioned: there is only one marble and stone firm in Ireland which possesses the proper machinery and plant for carrying on the trade in competition with Belgium and Italy; and that firm, despite the high railway rates, appears to flourish.

With regard to granite, Ireland produces some of the very finest. Those who may be curious on the subject may pay a visit to the Albert Memorial, in the construction of which no less than four different Irish granites from Down and Armagh were used; and they are certainly among the most beautiful parts of the stonework of the structure. Then the Thames Embankment is very largely constructed of granite from Dalkey. Yet Ireland imports granite from Cumberland and Scotland. It is not that she lacks either quantity or variety. There are fourteen different kinds of granite near the town of Galway, and excellent examples of the stone are met with in almost every county. High railway rates appear to be the sole cause of this

absence of trade in Irish stone. The case is the same with regard to clay, whether it be the brick-clay of Kingscourt and Courtown or the fine porcelain clay of Belleek. The railway companies, of course, say that their rates are not high: we shall consider that particular subject by-and-by. For the present it may be sufficient to point out that every attempt to work the more remote marble and granite of Ireland, every attempt to establish brickworks and potteries where beds of clay were found, every attempt to bring Irish stone and Irish slate into use for the building of Irish houses, has failed, and that the cause alleged in every case is the prohibitory railway charges. We do not make that statement here with a controversial purpose, but merely in order to record the allegation in its proper place. Whether it is true or false will be investigated hereafter.

There is certainly another ground of complaint, and that is the rooted disbelief of all Irishmen that anything good can come out of Ireland. Irish architects cannot be persuaded to use Irish building materials.\* They specify for Bath or Caen stone,

\* A very interesting and welcome personal repudiation of this charge has come from Mr. Thomas Newenham Deane, R.H.A., who writes: "As architect to probably the largest

for Belgian marble, for Welsh slates, for Bridgewater bricks, and so on ; although they know that better and cheaper bricks are made at Kingscourt, that just as good slates can be got at Killaloe and Valentia, that more beautiful marble can be brought from Galway, and that Irish limestone is as durable building stone as any other. Even the Irish Board of Works specifies for "Welsh slates" when it puts up farmhouses in Kilkenny and Tipperary ; and, naturally, the "outside" architects follow the lead of the official architects. This curious want of appreciation by Irishmen of the products of their own country exhibits itself in all directions. The lack of honour at home, restricted in other lands to prophets, extends itself in Ireland to the very stones.

---

building erected in Ireland for many years (the Museum of Science and Art and National Library), I am using the Mount Charles stone for all dressings and finer portions of the stone-cutting. It is a stone far more beautiful than Portland, quite as capable of being cut into any moulding, and if used in London would be found to defy all attacks of climate. It has the further advantage of being quarried near the sea and of being independent of railway rates." The exception proves the rule, and Mr. Deane himself says : "Irishmen are always talking of the importance of local industries, but they ignore the value of the marbles and building-stone which abound in the country."

## CHAPTER VIII.

## TIMBER AND PEAT.

Admiral Collingwood and the Acorns—Improvident Tree-felling in Ireland—Remains of former Forests—The Balance between Forest and Prairie—Extensive Replanting necessary—Area suitable for Replanting—Cost—Direct and indirect Advantages—Value of By-Products—Scarcity of Birds in Ireland—£130,000,000 gain from Reafforestation—Nature of Peat—Useful only as Fuel or Litter—Various Experiments.

THE story is told of old Admiral Collingwood (Nelson's Collingwood) that, when walking about his estate, if he came upon a vacant spot of ground, he used to make a hole in it with his cane, drop an acorn in and carefully cover it with earth. If some such plan had been followed by the landowners, or even by the peasants of Ireland, the present deplorable scarcity of trees would never have occurred. The plan in Ireland has been to cut trees down with every aggravation of improvidence and waste, and never—or with rare exceptions—to restock the denuded land. The result is that, generally speaking, timber is scarce in Ireland; and at the same time the country suffers from the

well-understood climatic and other evils which are invariably present in treeless regions. Want of shelter, liability to floods and drought, excess of moisture in the soil and in the air, and imperfect conversion of the atmosphere are the most obvious of those evils; but others will appear as we proceed.

In early times Ireland was remarkable for her great forests. When we remember that so far back as 1652 the gradual destruction of those forests was observed and recorded, that this destruction has been going on still more rapidly since, and that even now a considerable extent of forest remains, we may imagine how well the island must have been wooded "in the beginning." In the crevices on the top of the Mourne mountains, in county Down, which are now barren and desolate, the remains of oaks 4 ft. in diameter have been found. The bogs of Ireland are full of decayed roots and stumps. Indeed, Ireland has the indication of having been nearly all forest, whereas now it is a country of nakedness. Yet we must not imagine that this is due to the land having been cleared and cultivated. The trees were simply cut down and the land allowed to go

to ruin. In the low-lying districts it became bog (fifty years are sufficient to complete that kind of ruin, and in Ireland the process has been going on for more than two hundred years); while on the hillsides the soil has been washed away, leaving exposed the bare granite or limestone, as a perpetual witness to the wrong which has been done. Clearly the time has come for Ireland which will assuredly come even for Canada and the United States, unless they stop the present squandering of their forest resources—the time when, with great labour, at great cost, and with some uncertainty as to the result, the balance between forest and prairie must be restored, if the country is to remain habitable. Of all the grievances the Ireland of the present has against the Ireland of the past, none is sharper or more just than that of the improvident tree-felling by which seven million acres of the surface of the island have been transformed from a woodland to a waste.

What is possible to be done in arrest of the evil, and what advantage may be hoped for? Ireland must be replanted without delay. The precise method of planting is perhaps too technical a

---

matter to be gone into in detail; but we may mention that almost all the remains of pre-existent forests indicate a great preponderance of oak; and with oak, therefore, every available and suitable inch of space should be planted. It is a slow-growing tree, but it will grow, which is the great point; and when it comes to maturity it is very valuable. Next to the oak comes the pine, which always commands a market. Of beech there is still a considerable supply; but in point of fact almost any of the trees of Europe would flourish in Ireland, and it is, therefore, not necessary to specify further. The question of the particular tree to be planted is purely a local one. Probably there are 40,000 acres which might be stocked with oak out of the 5,000,000 acres estimated to be available for reafforestation, while the remainder would doubtless be chiefly devoted to pine and larch. The full return from this work would not come for a period varying from twenty to fifty years, so that it cannot well be undertaken by private persons; moreover, to do it thoroughly would cost not far short of 20 millions sterling, though that amount might be greatly reduced by sowing seeds in part, instead of planting saplings.

We mention these facts to show how large a question we are considering. Our suggestions are, in brief, that the State should have power to appropriate as forest-land one fourth of the surface of Ireland ; that it should plant, at its own cost, a shelter belt of pine along the whole of the northern and western coasts ; that it should give financial aid to approved schemes of reafforestation upon a mortgage of the future growth ; and that the whole matter should be under the charge of a special Department.

It is perhaps somewhat staggering to be told all this with respect to one of the many subjects connected with industrial Ireland, and that one not obviously the most pressing. But let us glance at the advantages to be anticipated. The fact that tree-planting pays in Ireland has been proved again and again. The timber when cut down returns not only the cost of planting, but a handsome rent for the whole period during which it has been maturing. In the meantime the growing trees do good in ways which are almost too numerous to capitulate. We will mention a few, without professing to exhaust the list. They afford shelter from the prevailing winds, to the



---

great benefit of agricultural crops, cattle, and the health of the people. They take up the moisture which now either collects in floods, or unduly increases the humidity of the atmosphere, or converts the low-lying lands into bogs. They improve, increase, and hold the soil, now washed down into the loughs or silted up in the beds of the rivers. They supply a large number of by-products useful in various industries most suitable to the circumstances of Ireland—for example: bark, charcoal, grasses, mosses, fallen leaves and branches (for manure), resin, food for cattle, fruit, mushrooms, fuel, litter, and so on. Then they afford cover for birds, of which there is a great scarcity in Ireland, especially of the grub and insect-destroying species—this may be taken as an example of one of the less obvious advantages. Surely these results are sufficient to encourage us to proceed. Nor would it be so very long before the more obvious advantages would be apparent. The oak plantations might be thinned out in ten years after planting, and from thence onward they would give an annual yield until the time came to cut down the timber. At the outside, the whole of the expense would be returned with a handsome profit

and much indirect benefit in fifty years, which is not so very long in the lifetime of a nation. Then we must not leave out of account the fact that even if the whole of the 20 millions above mentioned were spent, five-sixths of it would go into the pockets of the Irish peasantry as payment for labour. Taking the country generally, it may be reasonably anticipated that an expenditure of £20,000,000 on the afforestation of five millions of acres in Ireland would make that vast expanse of waste land worth at least £1 per acre for thirty years—a net gain to the country of no less than 130 millions sterling. This result comes out in another way by the calculation that if the forests of Ireland had been replanted as the trees were felled, she would now have been in possession of timber readily marketable to that enormous amount.

Now we turn to a very different and yet allied subject—the utilization of peat. Peat is something between a mineral and a vegetable. It is largely used for fuel, but it does not make very good fuel; and, on the other hand, its condition is such that it cannot be cultivated like ordinary vegetable mould. It is useless, we are convinced, to think of planting or cultivating the bogs.

Extensive reafforestation will prevent them from forming or spreading, and the edges of them might be planted with osiers and pines; but the main body of them must be made the best of in the condition in which we find them. Perhaps there is hardly any natural substance the use of which has been made the subject of so much experiment as peat. It has been dried and compressed in order to improve it as fuel; it has been largely used as litter; oil and gas have been extracted from it; it has been tried in the manufacture of paper; and even table-tops have been made from peat converted into a hard substance by enormous pressure. But the fact remains that the only thing to do with peat is to burn it. One anecdote will illustrate the difficulty met with in all cases. The O'Gorman Mahon once made a great sensation in the House of Commons by exhibiting some paraffin candles made from peat; but it turned out that they cost about a guinea each to make. Perhaps we ought to except from the general verdict upon the utilization of peat otherwise than as fuel the manufacture of litter. Vast quantities of peat-litter are made in Germany, and the article is largely imported into London. We believe the horses of

the London General Omnibus Company have for years been bedded with German peat-litter. In Ireland the upper turf is largely used for this purpose, but there is no litter industry. However, we are not prepared to say that one could not be created, if proper methods were taught and transport were made easy.

But to return to the use of peat as fuel. Peat is best when consumed at a high temperature, and this fact has led to the suggestion that it might be employed for the smelting of iron ore, of which, as we have previously shown, a large quantity might be worked in various parts of Ireland. The difficulty to be overcome is the competition of coal. Peat has less heating power than coal, and the bulk is considerably greater, so that its only chance of successfully competing lies in its relatively smaller cost. In order to be carried any distance with economy, the peat must be dried and pressed, and this is not always easy to be done. On the whole, we incline to the opinion that for a very long time to come—indeed, as long as the supply lasts—the best use for peat will be as domestic fuel on the spot where it exists. As a rule, coal is dear in the bog regions and wood is scarce, so that it is

absolutely necessary for the people to have recourse to peat. From all this it will be apparent that we do not regard the bogs of Ireland as belonging to those resources which are likely to bring much wealth to the country. The bog-covered surface of Ireland would be far more valuable in almost any other character. We can think of nothing worse save the glaciers of Switzerland or the lava-beds of Sicily. Vegetation of any sort would be better than the stagnant, sodden, rotting substance which constitutes the bog-land of the sister-island. Instead of peat being one of the natural resources of Ireland we regard it rather as one of her natural calamities—like St. George's Channel. If it serve any useful purpose at all, it will be by providing the Irish peasantry with fuel during the interval which must elapse before the replanting of the country has provided them with wood, or the development of her carboniferous deposits has given them the blessing of cheap home-gotten coal.



## CHAPTER IX.

## THE TEXTILE AND LEATHER TRADES.

Linen Manufacture—Need of Accelerated Development—  
—Belgian and German Competition—Large Import of  
Foreign Flax, although sufficient might be grown at  
Home—The Woollen Trade—Re-establishment of Mills  
at Blarney, Dublin, and other places—Non-manufacture  
of Irish Wool in Ireland—Objection of Irish People to the  
use of Irish Woollens—Action of North Dublin Guardians  
—Revival of Blanket-making—Irish Goods always too late  
for “the Season”—Faulty and Unsaleable Character of  
Irish Cloths—Poplin—Hosiery—Further complaint that  
the Irish will not buy Irish Goods—The Leather Trade—  
Export of Raw Hides and Import of Leather Goods—West  
of England Competition.

HAVING now concluded our examination of the  
natural products of Ireland—whether they be  
grown upon the soil, dug out of the soil, or mined  
from beneath the soil; whether of the land or of  
the sea, of the forest or of the field—we come to the  
great subject of Irish manufactures. But, in order  
to bring it within reasonable limits, we shall leave  
out of consideration those industries which are  
flourishing to perhaps their full capacity, like  
brewing and distilling, and also those which it

would be useless to seek to develop in Ireland, as the manufacture of brass buttons might presumably be. It is the middle section, consisting of industries which ought to flourish but do not, that concerns us for the moment.

This rough classification does not precisely meet the case of one of the most important industries—the linen trade. That trade is doing very well and is increasing, but is still capable of further development. It is in a healthy and progressive condition; the rate of progress might, however, be accelerated. We wish we had no worse to say of all the other industries of Ireland. At present the trade is recovering from the depression into which it was thrown a year or two ago, and which—though it did not reduce the output, the number of hands employed, or the wages they earned—materially diminished the profits. Companies which had previously paid 10 per cent., and over, went down to a dividend of 2 and 3 per cent. Still, even in the worst times there was a profit of some kind; and now we believe most of the linen companies and firms may be regarded as prosperous. Many causes are in operation to retard the development of which the industry is capable.



Flax has to be imported at a higher price than it might be produced for at home ; Belgian and German goods compete successfully against Irish linen in some of the leading markets, notably the American ; Belgium is the only European country which admits our linen products free ; the hours of labour are longer and the wages lower on the Continent than in Ireland ; and the Irish trade is burdened with the vast influx of capital and the expansion of the productive power which took place during the inflated years of the American civil war. It is by no means clear how all these hindrances to more rapid progress may be removed. To some extent they are counterbalanced by the superior excellence of the Irish article, and we may, perhaps, assume that one means of increasing the trade is to make the quality still better, if that be possible. Even as it stands, there is no industry in the United Kingdom more firmly established than the linen manufacture of Ireland. The condition of the factories, the health and comfort of the workpeople, and the position of the article in the markets leave very little to be desired. The total volume of the trade, including home consumption, is about twelve millions



sterling ; and the only really unsatisfactory feature is that five-sixths of the sum paid for the raw material go into the pockets of foreign flax-growers instead of into the pockets of the farmers of Ulster and Connaught. In all other respects the trade is so managed as to secure to Ireland the greatest possible return. Ireland imports the flax, but she only parts with it again in the most highly finished form. The raw material is manufactured up to its highest commercial value. It is not only woven, but it gives employment to thousands of people in bleaching, in hemming and stitching, in embroidery, in wood and paper box-making, and in shirt and collar making. That is the proper way to conduct an industry. Industrial organization has reached its highest point when a community is itself employed upon all the various processes, from producing the raw material to turning out the finished article. If that plan were adopted in all the industries of Ireland, the condition of the country would improve by leaps and bounds.

Down to very recently the woollen trade of Ireland was practically extinct. It was killed by the well-known Acts of William III. That piece

of injustice has been so frequently condemned that perhaps it may almost be said to have been expiated. Englishmen have vied with Irishmen in deploring the forcible suppression of an industry which not only supplied the home market of Ireland but supported a very large export trade. True to our policy of repudiating the past as a factor in the present, however, we leave that phase of the question to persons more interested in it. Gratifying indeed is it to state that of late Irish woollen manufacture has considerably revived. Successful mills for the weaving of tweeds and friezes have been established at Kilmacthomas by the Marquess of Waterford, at Blarney by the Messrs. Mahony, at Lier Vale, Clonmel, by Mr. Leachman, and at Lucan, county Dublin, by the Messrs. Hill. The local benefits these mills have conferred may be illustrated by the case of Kilmacthomas. now a thriving little town, but formerly undistinguishable from the general squalor and poverty of Irish villages. About 150 hands, earning fair wages and well-housed, are employed in the mill ; and their labour forms the basis of the economic system of the little community. These examples prove that Ireland is as well adapted for the production of

excellent woollen stuffs as ever it was, and that with fair conditions it can compete with any country in the world. Most of the wool now produced in Ireland is sent to Bradford, there to be manufactured into worsted and other kinds of woollen thread ; for it must be observed that the Irish wool generally is combing-wool—the long, bright staple—and not the clothing wool, which is a short soft staple. Here we have a curious anomaly. The wool of which Ireland produces most is not manufactured there at all, while mills have been set up for working the variety of which she produces least. Still, this fact need not stand in the way of an increased woollen industry ; for nothing would be easier than to augment the supply of clothing wool in response to a more active demand.

The first great step in the improvement of the woollen trade must be the more general use of home-made fabrics by the Irish people themselves. It is very odd to find that Lord Waterford sends perhaps the greater part of the produce of his mill to France ; that Irish frieze and tweeds are much appreciated in Yorkshire ; that they are eagerly bought by the “exiled” in America ; and yet that

down to very recently—long after the re-establishment of the industry—English cloths and blankets alone were used in the workhouses of Ireland. The people generally appear to think the cloth produced by their own countrymen beneath contempt. Nothing will satisfy them but Scotch tweeds, West of England broadcloth, Yorkshire hose, and so forth. Of course that attitude is fatal to the development of a home trade, and probably the newly-planted industry would have perished in its infancy had not some of the Boards of Guardians come to its rescue. We have much pleasure in singling out the North Dublin Board for special commendation. As far back as 1881 it determined to clothe the inmates of the workhouse with goods of Irish manufacture. That the goods were to be *bonâ fide* Irish was a condition of the contract; the maker's name was to be woven into the fabric. The saving to the union was found to be considerable, in some cases as much as 20 per cent. in price and 100 per cent. in durability. Other unions followed the example of North Dublin, and thus a stimulus was given to the trade. The way in which the home demand infused life into the industry is most curious and

striking. The articles of consumption in the North Dublin Workhouse number thirty-seven. All these, except six or seven, are now produced in Ireland. But it was not so at first. Why, when tenders on the "home-made" principle were originally invited, the guardians found to their astonishment that—for example—not a blanket was made in all Ireland! So they had perforce to put up with blankets made in England. After a while a man turned up from Dripsey, in county Cork, and said he would make blankets. The contract was given to him, and he has supplied the North Dublin paupers with good home-made blankets ever since.

The next move forward is one which the manufacturers themselves must make. They must use greater expedition in the production of their goods for the summer and winter seasons. They are always late. They come in at the fag-end of the important period during which the goods are being passed through the wholesale houses to the retailers. Spring cloths ought to be ready for delivery by December; otherwise, by the time they have been placed on view in the warehouses, have been inspected by the retailers, and are exhibited in the

tailors' shops, the spring is virtually over. It is a common complaint with the cloth merchants of Dublin that they never have the patterns of the Irish goods to hand when the buyers come up to look at the English, Welsh, and Scotch patterns. Again, durable and honestly made as Irish woollen fabrics certainly are, they want finish. You frequently find a faulty spot or two in a piece of Irish tweed—a thread gathered up or missed out altogether, or something which much reduces the “cut-able” character of the whole piece. Moreover, the Irish weavers are not good at producing new and attractive patterns. Their cloths have the monotonous appearance and the hardware strength of the old-fashioned homespuns. We are aware that the shoddy and showy products of the English and Scotch looms are justly despised by all lovers of honest and plain work. Reams have been written about the iniquity of shoddy and the double damnation of “fast colours.” But still the fact remains that an admixture of shoddy with the pure wool imparts a superior though illusory finish to the cloth, and that an attractive pattern will often sell a very inferior specimen of the art of weaving. It is the business of a manufacturer to

suit his market. An artist may be expected to starve in the interests of art rather than prostitute his talent by the production of pot-boilers, and we justly reproach the poet who, instead of throwing into poetic form great inspirations for which no one really cares a brass farthing, earns guineas by writing leading articles and lampoons. But the maker of the necessities of life is not hampered by these conventional restrictions. He is expected only to make his business pay ; and the only way to do that is to produce what the public wants. He will exasperate Mr. Ruskin ; but he will keep his mills going.

All these suggestions as to improving the woollen trade apply to one of the most renowned of the Irish textile manufactures—the poplin trade. This industry is now in the hands of three firms, all of them being in Dublin. It employs about 400 persons, and, although a relatively small business, is fairly flourishing. Poplin costs about the same as ordinary silk ; but it will outwear three silk dresses—and there's the mischief of it. For that very reason the silk-mercers discourage the sale of poplins ; and even if they did not, it is obvious that poplin could never be so remunerative to the



manufacturer as the less durable material. We believe that poplin makes remarkably good "silk" for barristers and judges. Latterly the leaders of Irish fashion have come to its aid, and with very good results. Indeed, that is one of the most valuable means of encouraging the industry. Of nine-tenths of the industries of Ireland it may be said that they have suffered from the apparently incurable aversion of the Irish people to home-made goods. "No Irish need apply" is practically written up over every Irishman's door. Take the case of hosiery, which is well described as having "slipped away" from Ireland—save perhaps in the solitary instance of the Balbriggan hose, which is still in great demand. In the country districts of England and Scotland the people knit their own stockings; in Ireland they do not even buy stockings of Irish make. A quarter of a million sterling goes every year to Germany and Scotland for the stockings worn by the Irish people. Taking fabrics of every kind, it is estimated that 15 millions annually is spent abroad by the Irish upon materials they might as well make for themselves. Now, if they would only establish in the country some form of self-protection, such as insisting upon being



supplied only with Irish fabrics, everything they want, of better quality and at least equal cheapness, would be supplied in six months. They must "boycott" the foreign (including the British) manufacturer. Silks, calicoes, poplins, tweeds, friezes, cashmeres, serges, broadcloths—all these might be made, and would be made, if the people would only ask for them. They must get out of their heads the idea that nothing is fashionable unless it is made out of Ireland. It is not for us to suggest how the change of taste is to be brought about. More may be hoped, perhaps, from the example of Lady Londonderry than from that of the North Dublin paupers. But both undoubtedly do good in their respective spheres.

The leather trade, as we have already seen, is injured by the enormous export of live cattle. It is said, in contradiction of this statement, that despite the export of live cattle, Ireland still exports hides. True ; but she imports leather, and boots and shoes, and saddlery. Now, instead of exporting hides, she ought to keep them all at home, as well as a great many of the hides which go on the backs of live animals to England and Scotland. She ought to tan them herself, and

then to make up the leather into the goods she is now obliged to buy. There is too great a readiness to part with the raw material instead of expending upon it the greatest possible amount of labour, until at length the highest commercial product is evolved. This is a fault common to almost every industrial operation in Ireland. At the first chance—at the very earliest stage at which an article is transmutable into money—away it goes. Its development or manufacture is left to other hands ; and so a great deal of highly remunerative employment is lost to the country. Let us prove this by reference to the past. Instead of exporting raw hides, Ireland used to import them and export leather. Almost every town in Ireland had a tannery. At the present time very few towns have one. The trade has been killed by the competition of the West of England, where the tanning process is completed in four months, as against the twelve months it takes (for no special reason) in Ireland, and where the hides are turned out of more even quality and shape. West of England leather is not so good as Irish leather—it is less tough, and absorbs water more readily ; but shoemakers and saddlers prefer it, as being more

workable, and as cutting up with little or no waste. Clearly there is no great difficulty in competing successfully against the West of England. If Irish hides were available, if there were a more abundant supply of Irish bark, and if the better methods of the West of England were adopted, Irish shoemakers and saddlers would soon revert to the use of Irish leather. A whole series of trades is affected by this one article of commerce, from cattle-raising to the making of boot-laces. Ireland imports seven-eighths of her boots and shoes. That one fact speaks volumes.

## CHAPTER X.

## POTTERY, GLASS, METAL-WORKING, CHEMICALS.

Excellent Pottery formerly made—Situation of Clay Beds—The Belleek Pottery—Great artistic merit of Mr. Armstrong's work there—Desertion of the Best Hands—Non-appreciation of Belleek Ware in Ireland—Sale of the Pottery and Present Condition—Need of Technical Schools—Flint-glass Factories—Waterford "Glass House"—Ample Supply of Glass Sand, and Granite—Bottle Manufacture—Suggestions as to establishing Metal Trades, such as the making of Cutlery, Implements, Tools, and Guns—Large Chemical Trade—Export and Import of Sulphate of Soda—Artificial Manures.

AMONG the numerous difficult problems which present themselves in connection with Irish industries, none is more perplexing than the question why Ireland should not be able to make at least sufficient earthenware and glass for her own needs. The problem is complicated by the fact that these industries, when they did exist in Ireland, were remarkable for the excellence of their products, and certainly did not decay from the competition of superior workmanship elsewhere. In Ireland

there is an ample supply of suitable clay, etc., and there was undoubtedly plenty of skilled labour ; yet the industry is practically dead. In Staffordshire, on the contrary, the industry flourishes, although all the important elements of the manufacture have to be brought from Cornwall, Devonshire, and Dorsetshire. The chief clay beds in Ireland are at Magheralamfield, Creenagh ; at Drumenagh, Corr, etc., along the south and west shores of Lough Neagh ; at Coal Island, county Tyrone ; and at Tullow, county Carlow ; while the special variety known as pipe-clay exists at Ballymacadam, near Cahir and Clonmel, and at St. John's Point, Roscommon, Kellymount, and other places. At Belleek, county Fermanagh, there is a limited bed of very superior clay, and here is established one of the only two manufactories of really fine pottery in Ireland. Its history is extremely interesting and curious.

A good many years ago the existence of the Belleek clay came to the notice of a Mr. David McBurney. He took a partner named Armstrong, who, besides being an excellent chemist, had great skill as a modeller. They started the Belleek pottery, and turned out goods equal to the best

English make. The capital they invested amounted to about £50,000. But they had made the great mistake of attaching too much importance to the manufacture of the pottery upon the spot. It would have been better if they had established their works at Dublin or Belfast, even if they had had to import the clay. Belleek was at this time a small inland town, unconnected with the railway system; and it was that circumstance which ultimately led to the failure of the enterprise. The clay was obtained cheaply enough; but the fuel had to be brought to Belleek from long distances by expensive means; so that the cheapness of the clay was more than outweighed by the dearness of the fuel. When we speak of importing the clay, however, we do not exclude the idea of utilizing the exceptionally good felspar of Belleek; what we mean is that it must obviously be cheaper to carry felspar than to carry costly and fragile articles of pottery. By-and-by the Belleek works achieved what may be called a complete artistic success. Under Mr. Armstrong's teaching the hands had acquired extraordinary skill. Though not entitled to rank, perhaps, with Palissy, or Wedgwood, or George Tinworth, Mr. Armstrong had the potter's

gift to a very high degree. Even under the indifferent monetary success of the enterprise, the boys whom he had taken from the mountain-side and trained were able to earn £4 a week. There, indeed, was the cause of the first trouble. The "struck eagle" who "viewed his own feather in the fatal dart" was no more the fabled prototype of Henry Kirke White than of Armstrong of Belleek. Having acquired their skill from him, his "boys" deserted him and went to New York and Belgium, attracted by higher wages than he could afford to give. In many a Belgian and American pottery the artistic traditions of Belleek are still preserved. The next blow was of somewhat the same cruel description. Every country bought the Belleek wares but Ireland. An eye-witness has recorded that one day, in the packing-rooms of the pottery, he saw goods to the value of between £500 and £600 being forwarded to Milan, Florence, Rome, Paris, Vienna, London, New York, and Philadelphia. None of it for Ireland? Oh, yes—£5 worth! Matters, we hope, were not always so bad as that; but there is very little doubt that for at least three-fourths of its customers the Belleek pottery had to go abroad. In point of fact, the work met with next to no

encouragement at home, although every day hundreds of pounds' worth of inferior goods—not so much cheaper, either, if any—were coming into Ireland from Glasgow, Staffordshire, and elsewhere. Still, the crowning difficulty was carriage from Belleek to the sea. The cost of bringing in the fuel, on the one hand, and taking out the goods, on the other, hung like a millstone round the neck of the concern. Yet it did not stop until the death of Mr. Armstrong, in 1884. He was the sole surviving partner of the original firm, and at his death the doors were closed. Not, however, for long. A local company was formed by some of the Commissioners of Ballyshannon, and they bought the premises. They acquired a 999 years' lease at a nominal rent of £50, and the whole of the buildings, plant, stock, and goodwill passed to them for £4,500. There being still some of the best hands available, the artistic standard was quickly recovered; such works as copies of Flaxman's Venus and other works in Parian being satisfactorily turned out. We believe that the pottery is now being carried on successfully, a railway having been made to the place; while, of course, it is not burdened with the enormous weight of capital



invested in it by McBurney and Armstrong. Even yet, however, the transport difficulty has not been entirely got rid of, for great complaint is made of the heavy railway charges.

The other manufactory of artistic pottery is in Dublin, and was established there some years ago by Mr. F. Vodrey, who says he has a rapidly-growing demand for his ware, and is exporting it to the United States and Canada. That proves the practicability of making pottery a large and paying industry in Ireland. But it remains to be said that the need of technical schools is much felt. One striking example of this fact will suffice. A Mr. Anderson once had a considerable business in china-painting in Dublin. The ware was brought over from England in the biscuit (*bis-cuit*) condition, painted by him and his pupils, and then returned. But Mr. Anderson died, his pupils separated, and the business came to an end. The same story of an industry flourishing under an able and energetic man and then dying with him has to be repeated in the case of most of the defunct industries of Ireland. There is no carrying on of the tradition from generation to generation as there is in other countries, and the reason is largely

to be found in those racial defects (especially want of staying-power, continuous effort, and qualities of that sort) which permanent institutions like technical schools would undoubtedly correct.

In the last century there were twenty-two flint-glass manufactories in Ireland. At the beginning of the present century there were fifteen. Of these, thirteen lived to well within the century. There now remains only one. The factories at Waterford, Cork, and Newry used to turn out goods of the very finest quality. Old Irish cut glass is eagerly bought up by collectors. The writer has himself bought in Waterford wine-glasses of local make and of the highest degree of finish and brilliancy. They had been in one family nearly a hundred years. The famous "Glass House" of Waterford, where they were made, was in good working order thirty-five years ago. The gasalier in Waterford Town Hall is a good specimen of its manufacture. A Waterford decanter will now fetch treble the price of the best English crystal. The "Glass House" came to an end in consequence of a strike. It was owned by very rich people (they were Quakers), and when the workmen struck they quietly gave

up the business and went away. Unhappily this is not the only instance in which a strike has killed an industry in Ireland. In certain other cases the works were stopped because they could not be made to pay ; or because, when foreign competition arose, the glass-makers were seized with that species of paralysis which we have before observed in connection with other trades. Now it is obvious that the natural facilities for glass manufacture in Ireland exist the same now as in former times. There is still abundance of suitable sand at Muckish, in Donegal, the quality being as good as that of the Belgian and Fontainebleau varieties ; at Ballymanus in county Wicklow, and even at the most distressful island of Achill. Moreover, a practically inexhaustible supply of tremolitic rocks, available for the making of coarse glass such as is used in bottles, exists at Lough Corrib and in county Antrim. We must not forget either, that at the glassworks of Elbogen and Dresden, twenty-five millions of bottles are made every year out of granite similar to that which exists in almost infinite abundance in the north of Ireland ; and that the use of granite instead of sand dispenses with the necessity for sulphate of soda in the

process of manufacture. The sand or granite could be cheaply brought to any seaport, where also coal could be had cheaply; and, the capacity of the people for the work being abundantly proved, there can be no reason why glass-manufacture should not be revived. Glass goods of low price are in great demand in Ireland—the large employment of bottles goes without saying; and if the old standard of quality could be regained, Irish crystal would grace many an Englishman's "mahogany." The one prime necessity in regard to both pottery and glass works—and indeed in regard to all industries where fuel is a great consideration—is that they be established at a seaport, at least until native coal can be worked as cheaply as English, Welsh, or Scotch.

With regard to metal-working, our intention is not to deal so much with large operations like the making of rails, bars, or machinery. For these Ireland is not at present adapted. But cutlery, tools, domestic utensils, clocks, and other articles of common use might be made. We have not here, as in the case of pottery and glass, any past triumphs to emulate or any lost ground to recover. But we have the important facts that unmanu-

factured metal is as cheap in Ireland as in England, and that practically the whole of the implements, tools, and household ironmongery used in Ireland are imported. The humble itinerant scissors-grinder is almost the sole representative of the great cutlery trade. There are, of course, a few jobbing tinsmiths; but they are little better off than the South Sea islanders who "earn a precarious living by taking in one another's washing." Father Mathew's temperance crusade half-ruined the coppersmiths, though we believe the Irish are even yet not all teetotalers. Gunmaking was formerly a considerable industry, but it received a great blow from the withdrawal of all Government orders and the centralization of the Government departments about forty years ago. Previously a large number of hands found employment on military guns, and the arms used by the coast-guard and local forces were supplied by Irish makers. More recently the competition of Birmingham has killed the production of low-priced guns; while in fine guns the trade has been reduced by the absence and impoverishment of the landed proprietors. Small wonder is it that the craft of gunsmith is disappearing in Ireland. The esta-

blishment of a proof-house in Ireland, the legalisation of the sale of arms bearing the Irish proof-marks in Great Britain, the restoration of Government custom—these are among the suggested means by which the gun industry might be revived. Then there are pin-making, gold and silver manufacture, domestic-machine-making, coach-building, instrument-making, and a great many other industries which involve the working of metals—all these are declining. The causes in some instances are apparently irremediable. The extension of the factory system in England and other countries, the decrease in the population and wealth of Ireland—such may be mentioned among causes beyond, at all events, immediate remedy. But Birmingham is a standing example of the way in which individual craftsmen may yet hold their ground against all the combinations of labour and capital ; and we are not without hope that by-and-by the tide of population and wealth will cease to ebb in Ireland. Still, for really prompt relief we must look in other directions. Protective duties, so strongly urged in many interested quarters, cannot be thought of. Government and royal patronage, the encouragement of the Irish people

to spend their money at home instead of abroad, the extension of industries requiring metal tools and implements—these are among the remedies for which we may fairly hope.

The importance of the manufacture of chemicals was on a celebrated occasion insisted upon by Lord Beaconsfield. It is, however, a highly technical subject, into which we do not propose to enter at great length. It will surprise many people to learn that the chemical trade is a large one in Ireland. It consists of the manufacture of sulphate of soda, of bleaching powder, and of artificial manures. Sulphuric acid is of course made; but the whole of it is used up in the manufacture of sulphate of soda and manure, and of the sulphate of soda 99 per cent. is exported. To make sulphuric acid for export is found not to pay. A curious fact in this connection is that Spanish pyrites is chiefly used, and not the home pyrites, the reason being that the cinder from the Spanish ore is valuable for the metal it yields. Now, with regard to the export of 99 per cent. of the sulphate of soda, this implies, of course, that there is no employment for sulphate of soda in Ireland, or for only 1 per cent.; and none is imported. The explanation is very simple.



Ireland has no use for sulphate of soda, because she has practically no glass industry. The 1 per cent. of sulphate of soda goes to the solitary glass-works in Ireland. No more striking example could be given of the way in which one industry reacts upon another. But, on the other hand, Ireland also exports 60 per cent. of her bleaching-powder and consumes 40 per cent. That quantity not being sufficient, the deficiency is made up by Sir Charles Tennant's great works at St. Rollox, Glasgow; and the question is, why the English and Continental bleachers go to Dublin for powder while Belfast goes to Glasgow. Except that, perhaps, Glasgow is commercially nearer to Belfast than Dublin, we are not able to suggest an answer. Manure manufacture is a large and growing industry. The total consumption in Ireland is 100,000 tons per annum, of which 60,000 tons are made at home. The materials, except sulphuric acid, are imported. However, this is, perhaps, a subject which one may consider with mixed feelings. Artificial manure is "handy," but it is costly; and the use of it leads to waste of natural manure on farms. The saving of a ton of the latter is a positive gain to the country;



the waste of it, and the substitution of artificial manure made with phosphates from England and blood from the River Plate may be a loss, despite the employment given in Ireland by its manufacture.

## CHAPTER XI.

## PAPER AND FLOUR MILLS.

Export of Rags and Import of Paper—English Competition—Facilities for Manufacture of High-class Paper—Paper Bags—Decadence of Flour-milling—Roller-machinery *versus* Millstones—American Competition—Austro-Hungarian Method—Great Want of Bran and Pollard in Ireland—High Prices of these Articles, and Evil Effects on Cattle and Dairy Industries—Advantages of Ireland as a Milling Country—Suggested Duty on Imported Flour—Protectionist Heresy.

AFTER so many examples of the haste with which Ireland turns into money the materials which would support many a valuable industry if manufactured into their highest form, it will surprise no one to hear that Ireland exports nearly all her rags and imports nearly all her paper. This inscrutable thriftlessness might be pardoned if the loss it occasions were balanced in other departments of industry. Ireland might very well afford to pay us for turning her rags into paper if she were making large profits, for instance, out of her

---

exports of food. Or, again, the virtual absence of any paper trade in Ireland might be excused if none had ever existed. But the fact is that there used to be a very large paper manufacture in Ireland, and the difficulty is to account for its disappearance. Speaking roundly, it may be said that it had not the advantage of the capital or the skill which have been thrown into the same industry in England, and that therefore it has been killed in fair fight by competition. But this does not cover the whole ground. The English competition began to be felt in the cheaper sorts of paper, made not from rags, but from Esparto grass, jute, and other fibres, which could be bought for less in England than in Ireland. Instead of recognising the limits of that competition, and seeing that for the future Ireland must depend upon the production of the finer varieties—for which the large home supply of cheap rags gave her pre-eminent facilities—the Irish paper-makers closed their mills altogether! There were large mills in Dublin, Cork, and other places; they all made better paper, in the higher qualities, than could be imported at an equal cost from England; and there was no possibility of their being beaten except in the lower qualities;

yet they were all closed. The makers seem to have lost heart just when they might have asserted a foremost position in the manufacture of paper from rags alone. If current reports in the paper trade be true, this is the only branch of it which now pays a profit. There is practically no limit to the supply of Esparto grass, jute, wood pulp, chalk, straw, and the thousand and one nameless substances which go into the manufacture of coarse paper, from the toughest "ironmonger's paper" or the stoutest millboard to cheap wall and news paper. But the supply of rags is limited, and always will be; and if Ireland would even now only keep her rags at home and make them into writing-paper and the best kinds of wall and printing paper, she would not have much to fear from either English or foreign competition. The finer the quality the more secure she would be. Reels for web printing-machines, and what grocers call tea-paper, with other white varieties of paper, may still be made more cheaply in England, while France would be difficult to beat in the manufacture of wall paper, chiefly owing to the superiority of her designers and stainers. But writing papers of all kinds might beyond doubt be

largely and profitably manufactured in Ireland. There being, moreover, a very considerable manufacture of paper bags in Ireland (all the paper for the purpose being imported), it is possible that the existence of a home demand for special lower qualities might support a home production.

Another industry which has much in common with paper-making is flour-milling. This is a subject with a most melancholy history. Milling used to be done all over Ireland, but fully two-thirds of the mills have been stopped within the past ten years. The cause alleged is the competition of American flour, and there seems no reason to doubt the statement, considering the extent to which American imports have affected the English wheat-grower and miller. Most of the milling in Ireland is in the hands of large firms, whose resources have enabled them to adopt the most modern machinery, that is, steel rollers instead of the old-fashioned millstones. There are large mills in Armagh, Down, Londonderry, Tyrone, and Cork counties—most of these have adopted rollers. The superiority of rollers over stones comes out in a somewhat curious way. In order

to yield really good, sound flour, the wheat must be ground perfectly cool, without any increase in the temperature. By the system of gradual reduction in the rollers the wheat is nipped gradually, and does not undergo any increase in temperature; whereas by passing through the mill-stones it gets heated. Probably the wheat would take about a minute to travel from the centre of the stone, where it is put in, to the point of discharge at the rim, and this prolonged friction imparts to the flour considerable heat. The difference in the quality of the flour for baking purposes is so great that the bakers will not buy the stone-ground article when they can get roller-ground; and as all the American flour is of the latter class, it follows that no revival of milling is possible in Ireland unless the improved system is adopted. But that alone would not be sufficient, and it seems to us that Ireland might take a lesson from Austria and Hungary. Austrian and Hungarian flours stand highest in the market, not because of any superiority in the wheat, but because there is a large home demand for the coarser descriptions of flour, and only the finest descriptions are exported. The Austro-Hungarian millers take only

about 8 cwt. or 10 cwt. of very fine flour from each ton of wheat, and the remainder is sold for home consumption as seconds, at a very low rate. In America they take nearly all they can out of the wheat, just as is done in Ireland ; so that virtually only one quality, and that not the finest in the market, is produced. We fancy that Ireland, like Austro-Hungary, might make shift with "seconds" for herself (it would be better than potatoes, and more palatable than oatmeal), if by so doing she could revive her once important milling industry, and become the producer of an article always certain of a market.

But there is more to be considered than the direct profit to be made out of milling, as will be seen by a series of remarkable facts now to be stated. Although America and other countries send their flour to Ireland, they do not send their bran and pollard. Flour stows so well that ship-owners bring it across at almost nominal rates. It is, indeed, cheaper to carry than wheat. On the other hand, bran and pollard, especially the former, are so springy and so bulky in proportion to their weight, that they cannot be brought over at any price that would pay. Now milling in Ireland

itself having so greatly decreased, it follows that the offal of wheat and oats, which is so valuable for pig and cattle feeding, is chronically at famine prices. Thirty-five years ago the Irish millers were glad to get from £3 to £4 a ton for their bran; but now it readily fetches £6, or even £8 per ton, and the millers cannot supply the demand. In other words, the Irish cattlemen and dairymen have to pay more than double the intrinsic value of the bran, it is at once so necessary and so scarce. The Irish millers themselves admit that they could hardly work and meet the competition in foreign flour were it not for the exorbitant price they get for bran. That fact, of course, considerably handicaps the cattle and dairy industries. The price of bran in Ireland very often exceeds the price of wheat—a circumstance which led us to remark before that the cereal crops of Ireland, if they exceeded the needs of the population, might profitably be turned into food for cattle. One of the indirect effects of the revival of milling in Ireland would therefore be one of the most important. All the bran produced would sell readily at a good price, to the benefit both of producer and consumer; cattle-raising and dairy-farming would pay better;



and the classes favourably affected would be able to raise their scale of living.

All these remarks apply as well to oatmeal as to flour, but there is something further to be said respecting the former. A large quantity is imported into Ireland from America, and so the offal is lost to the Irish cattlemen and dairymen; but that is not the worst. Oatmeal-milling has declined, and so has the consumption of oatmeal by the people, the reason being the dearth of bran and pollard. Bran feeds the cows, and the cows yield milk, without which oatmeal is not very palatable. Dear bran means dear milk; dear milk means less consumption of oatmeal; less consumption of oatmeal means less production of bran—and so round the circle. Oats, as we have already shown, is the staple cereal crop of Ireland, and if it is to be maintained the oats must be milled at home. Somebody, however, must be induced to make a start. The farmers are required to grow more oats, the millers to grind more oatmeal, the people to eat more of it in place of potatoes, and the dairymen to give their cattle more bran. Which of them is to begin is a tough question. Perhaps as we have reserved this matter till we came to the

milling industry, we ought to lay the *onus* upon the millers.

The question of competition deserves brief consideration. So far as regards flour-milling, practically all the wheat would have to be imported. That is no doubt a disadvantage. But on the other hand, the United Kingdom, being the commercial centre of the world, can always command an ample supply, no matter what local circumstances may affect the production. A blight in Russia would merely cause us to draw more heavily upon America ; and then we have Canada, India, the Baltic, Austro-Hungary and other sources of supply. Moreover, it is by the mixture of different wheats that the best flour is made, and we have all the crops of the world at our disposal. So that, given the best machinery, the finest flour ought to be produced here at the lowest possible price. Ireland is in this respect under no disadvantage as compared with the rest of the United Kingdom ; indeed, in her numerous ports, her water-power, and her cheap labour, she has several important advantages. Then with regard to the offal, the market for it would never be disturbed by foreign competition. It is always in

sufficient request on the spot where it is made, so that there is no inducement to export it ; and even if there were, the freight would be prohibitory. Attempts have been made to compress the bran, but it heats in transit, and becomes spoiled. Fine flour to sell ; "seconds" and oatmeal to eat ; cheap bran and pollard ; plenty of milk with which to eat oatmeal ; large crops of oats—these are all associated with the revival of the milling industry.

It has been proposed to effect the desired result by imposing a small duty—say 1*s.* per sack or 8*s.* per ton on imported foreign flour. This alarming suggestion would involve an increase of half a farthing in the price of a 4-lb. loaf. No doubt that would be quite enough to set up an outcry about "dear bread," and we must be understood to mention it with bated breath and whispering humbleness. But, as is not uncommon in these cases, there are a good many plausible things to be said in its favour. A vast quantity of foreign food stuff which now enters Ireland in the form of flour would come in the form of wheat. The milling of that wheat would employ an enormous number of hands, and in the end the flour would be available for the consumer at practically the same price now

paid for it as milled abroad. Farmers and dairy-men would then have an increased demand for their produce, at the same time that they would get an increased and cheaper supply of food for their cattle. Thus we have on the one side: Bread a farthing per 8 lbs. dearer. On the other: employment for thousands of mill-hands; abundance of cheap milk and butter; a consequent increase in the growth and consumption of oatmeal, this in itself having in turn a favourable influence on the cattle and dairy industries; a large supply of cheap "seconds" flour for those who can afford it or do not care for oatmeal; with subsidiary advantages to the sack industry, the twine industry, carriers by sea and land, and so on. The question is whether the increased employment, the better and cheaper food, would make up for the extra half-farthing on the loaf. It is rank heresy, we believe, even to formulate such a question; to answer it in the affirmative would be high-treason. Perhaps we had better let it alone.

## CHAPTER XII.

### A GROUP OF MINOR TRADES.

Handicraft in Ireland—Depression in Various Trades—Particular reference to Coach-building, Boot and Shoe-making, and Brush-making—Large Supply from England and the Continent—Excellent Quality of Irish Workmanship—Injury done by Trade Unionism—Irish Industrial Characteristics—Want of Business Aptitudes, though the Irish are Good Workmen.

A REVIVAL of the great manufactures, such as those we have been considering, would of course bring with it an improvement in the condition of the various handicrafts ; and the mason, the carpenter, the plumber, the upholsterer, the baker and the butcher, as well as the great shopkeeping and warehousing classes, would participate in the re-awakened prosperity of the miner, the farmer, the ironworker, and the factory hand. At present "trade," understood in the limited sense of craftsmanship, is suffering in company with agriculture, manufacture, and commerce. Many trades, like

many manufactures, have actually died out in Ireland. Among those which still live, though they are really moribund, may be mentioned engraving, glove-making, gun-making, lace-making, lock-smithy, sculpture, ship-building, soap-boiling, chandlery, tanning, tool-making, type-founding, shirt and collar-making, straw hat-making, lucifer match-making, fancy box-making, bleaching and dyeing, button-making, cooperage, sugar refining, and coach-building. With regard to the products of all these industries it may be said that Ireland imports far more than she manufactures. She has the usual complement of bakers, blacksmiths, bricklayers, carpenters, plumbers, printers, tailors, butchers, turners, etc., but complaint is made on all hands of the slackness of trade. We must confine ourselves to one or two specific cases, which may be taken as typical of the whole.

In 1799, coach-building in Dublin alone gave employment to between 1700 and 2000 hands, not including car, gig and chaise makers. About 1840, when railways came into use, the operative coach-makers found ample employment in the manufacture of railway carriages, not only for Ireland,

but for England and the Continent. But at the same time a great revolution took place in the class of carriages for private use. The light, handy brougham took the place of the cumbersome, costly chariot, and then came the famine period, from the disastrous effects of which the trade never recovered. Still, even after the famine the trade employed between 700 and 800 hands. In 1849 there were twenty-five carriage works in Dublin, such as Hutton's, O'Neill's, Long's, Dawson's, and Quan's. But at the present time there are only about ten coach factories manufacturing gentlemen's carriages, giving employment to about 200 hands. To these may be added—though they have been excluded from the figures relating to 1799 and 1849—the hands employed in manufacturing spring vans, cabs, cars, and railway and tramway work. These number about 300, making 500 in all. So marked a decline is full of sad significance. The causes alleged are absenteeism, importation, and the general depression of all the other industries. Importation is the chief. The “nobility and gentry” buy almost all their carriages in England or on the Continent; and the trade is only kept alive in Ireland by the doctors, the lawyers, and

the merchants. It is obvious that for the actual "first cause" we must search very deep down. The landed interest has ceased to buy Irish carriages, because it has well-nigh been destroyed ; and what there is left of it need hardly be looked for on Irish soil. One of the indirect results of the recent subversion of Society in Ireland is the ruin of coach-building.

At the beginning of the century, every boot and shoe worn in Ireland was made on Irish lasts. To-day, not more than one-eighth of the boots and shoes are home-made. Perhaps not so many were worn then as now ; but the fact remains that Ireland buys from abroad a necessary article which she ought to make at home out of materials which she herself produces in abundance. Even with regard to the leather out of which Ireland manages to make one-eighth of the boots and shoes she needs, most of it, as we have already seen,\* is manufactured in England. The explanation given by the boot and shoe-makers is not flattering to their countrymen. In their ignorance and shortsightedness, it is said, they buy the cheap but rubbishy foreign article, rather than sound

\* *Ante*, p. 106.



but somewhat dearer goods of Irish make. In addition to this inducement of low price, there is the apparently reckless terms upon which the imported goods are supplied, extravagant discounts and inordinate credit being allowed. The competition is not, indeed, in the quality of the goods—*that*, we suppose, has reached its lowest point—but in price and “accommodation.” Of course we are glad to be told that the Irish manufacturers will not join in this ruinous scramble for trade at any cost—that they have no ambition to supplant imported rubbish by still more rubbishy goods of home manufacture—but that they are content to await the certain eventual triumph of the honest serviceable article. We fear, however, that they will have to wait a long time. The reign of King Shoddy shows no signs of coming to an end. The advantages of Irish over English boots and shoes will never be perceived so long as there is a difference of fifty or sixty per cent. in the price. A difference of ten per cent. only, even if some sacrifice of quality had to be made, would be much more likely to turn the scale of preference to the side of the Irish article. What has been said of the textile trades may be said of the boot and shoe

trade—it is the duty of the manufacturer to suit his market.

Brush-making is another handicraft which has steadily declined. There is not in all Ireland a single brush factory under the Factory Acts. The trade exists in small and isolated instances, where a man able to keep a lathe manages to earn a livelihood by his own labour. In former times Ireland sent over considerable quantities of brushes to England. Even so recently as 1870, the census revealed the existence of 162 brush and broom makers in Dublin. We question whether half that number could be found now.

*Et sic de cæteris.* Look where we will we read the same story. Handicraft has followed Manufacture and Agriculture on the downward road. Emigration no doubt accounts for much of the decline, but strikes and the refusal of the workmen to permit apprentices largely share the responsibility. In saying this we have no thought of attacking Trade Unionism. Rather may we say that Ireland has suffered from all the defects of Trade Unionism and reaped none of its advantages. It has killed many an industry, but it has not equalised the distribution or the wages of labour. Instead of

bringing to bear upon employers the whole state of the labour market throughout the island, it has simply compelled the employers to close their works. Instead of relieving congestion, it has produced collapse ; and the result should show that these economic wars, in which the forces of Demand and Supply are marshalled on opposing sides, need to be waged upon a sufficiently large scale.

Here is perhaps the proper place to make one or two necessary remarks upon the industrial characteristics of the Irish people. Generally, it may be said that their capacity for handicraft is remarkable. They are quick to learn and faithful in performance. The Irish artisan is almost invariably a good worker—capable, honest, and painstaking. But he lacks the initiative, the forethought, and the business aptitude necessary for the successful prosecution of enterprise on his own account. Excellent as a workman, he speedily goes to ruin when he attempts to be a master. He finds—much to his surprise, no doubt—that his payments do not come back as they ought to do ; that his contracts bring him nothing but the reward of virtue. Education may in time do much to remedy this singular defect, but for the present

it must be taken into account whenever we estimate the industrial capabilities of the Irish people. The obvious lesson it teaches is that Irish labour is a thing to be employed, rather than to find employment for itself. The Irish mechanic must be treated as a being with excellent hands but no head. His operations must be directed by English or Scotch intelligence. The English factory system ought to be well adapted for Ireland. Give an Irishman a wheel to turn, a horse to drive, or a plank to saw, and he will do it with almost pathetic fidelity. Invite him, however, to earn a living in the best way he can think of, and he will gaze at you with dumb and perplexed astonishment.

## CHAPTER XIII.

### COTTAGE INDUSTRIES.

Six Months' Idleness in the Irish Cabin—Suggested Occupations for the Peasants—Osier-weaving—Numerous Uses of Osiers—Bog-oak Carving—Straw Bottle-envelopes—Straw-plaiting—Weaving, Knitting, and Embroidery—Mrs. Ernest Hart's Work in County Donegal—Room for great development of Cottage Industries on similar lines—Large Supply of Cheap Labour—Mrs. Edward Ponsonby's Embroidery School at Garry Hill—Bees and Poultry.

FOR at least six months in the year the Irish peasant—man and woman, boy and girl—is idle. The potatoes have been dug and stored, the peat has been cut and dried ; and there is nothing left but to huddle together in the cabin, which during the wet season is as blank as the wigwam of the Indian. How dreary those idle months must be, how terribly trying, both physically and morally, to those who undergo them, may easily be imagined. But let us look at the matter from the purely commercial point of view, and try to realize

the waste of time and energy which ought to be profitably employed—the economic unsoundness of a state of things which condemns millions of people to idleness during half their days. Even from that unsentimental standpoint we may see that one of the greatest blessings possible to be conferred on Ireland would be the provision of work for those idle hands to do. The kind of work suitable for them is not difficult to indicate. The men might weave baskets, carve into artistic shapes the renowned serpentine, bog oak, and spar of Ireland, or make the straw bottle-wrappers so largely used in the Irish wine and spirit trade. The women, in addition to these occupations, might weave woollen and flaxen cloth of various kinds, knit socks and stockings, make up women's clothing, keep poultry and bees, plait straw hats and bonnets, or work lace and embroidery. This is by no means a far-fetched or exhaustive list. On the contrary, it is thoroughly practical. All these occupations are already, to a small extent, carried on: what is wanted is that they should be made general and constant throughout the island.

The wicker baskets used in Ireland are mostly imported from the south of France. Those which the

peasants use are made of hazel, and are very heavy and cumbrous. A certain proportion of the willow baskets is made in Ireland ; but we maintain that the whole of them should be home-made, with the exception perhaps of certain very fine sorts made of special osiers not suitable for growth in Ireland. We have already mentioned that osiers would thrive all along the fringes of the Irish bogs and the banks of the rivers, that they would begin to yield a return in two or three years, and that when thoroughly established they are worth about £25 per acre. The trade of basket-making is not difficult to learn, and it is admirably adapted to the conditions of the Irish people. Even a second-rate worker can earn at it a pound a week ; and what would that not mean for the Irish peasant, as compared with six months of idleness ? But the making of baskets does not nearly exhaust the applicability of osiers. In the south of France wickerwork is used for window-blinds, for beds, for chairs, for tables, and even for the walls of houses. The willow serves for the peasants of the basin of the Garonne all the purposes which the bamboo serves in Eastern Asia. A moment's reflection will show how a little handiness in the weaving of osiers

would, with little labour and no expense, add immensely to the comforts of the Irish cabin. A cosy basket-chair, a long broad springy wicker lounge, a stout ample bed—why, these are among the luxuries of the higher civilization as it exists in suburban and especially riparian London! As for the carving of bog-oak and serpentine, those who feel disposed to reject such an idea as Utopian leave out of account the undoubted artistic talent of the Irish people. There is abundant testimony to the existence of this talent in the work already done in the glass, wood, textile, pottery, and other trades. We do not say that the talent is creative. On the contrary, it is distinctly imitative, but nothing more is wanted for art workmanship of the kind under notice. So long as the cottagers are given good models to imitate, and imitate them well, the industry will be practicable and profitable.

But perhaps the most extraordinary of all the cottage occupations we have mentioned is the making of straw bottle-envelopes, of which Ireland imports annually from France £100,000 worth. The demand for these articles is astonishing. One Dublin firm of wine merchants alone imports two



millions every year ; and there are about three hundred wine merchants in Dublin. The cheapest foreign envelopes cost 16s. per 1,000 ; to which must be added freight, 5s.—total, 21s. A better quality is made in Ireland for 10s., and the carriage from the principal place of manufacture is 2s.—total, 12s. This industry is carried on at present in a small way in twenty-two places, by men, women, and children, who were personally trained by Mr. Peter O'Callaghan, of Merrion, and the envelopes are readily bought. The average earnings are 10s. per week. It is calculated that the demand in Dublin is sufficient to give constant employment to all the poor of the city. At all events here we have £100,000 going abroad every year in payment of work which could be done just as well at home. All that is necessary is to teach the people how to make the envelopes, and a little gold-mine is at once opened up to them.

The case is somewhat similar with strawplaiting. This work employs about 600,000 girls in England. It used to be done in Ireland—chiefly at Stradbally, in Queen's County—and even now the industry is not forgotten. With a little encouragement it might soon be revived and extended. But

in order to make it thoroughly successful, it must be taught in the schools, like sewing. Grown people do not take to it readily.

Coming now to what we may regard as peculiarly women's work, such as weaving and knitting, we cannot do better than tell the story of Mrs. Ernest Hart's noble and successful efforts in County Donegal and other parts of Ireland. While Mrs. Hart was travelling through Donegal with her husband in the spring of 1883 for the purpose of investigating the alleged distress, her sagacious mind was struck with the idea that if employment could be found to fill up the spare time of the people, that would be better than effecting even a complete revolution in their condition. She decided upon endeavouring to revive the old cottage industries, and to develop and improve the ancient arts of spinning, weaving, knitting, sewing, and embroidery. The extent to which Mrs. Hart has succeeded may be seen at a glance by any one who will take the trouble to visit Donegal House, 43, Wigmore Street, the London *dépôt* of the Donegal Industrial Fund. There may be seen the deftest hosiery, the daintiest embroidery, and the most honest fabrics of all kinds for man's or woman's wear, to be found in

all the West-end. From the species of rhinoceros-hide in which Mr. Parnell delights to clothe himself, to the most gossamery lace, everything that hands can make with threads is made by Mrs. Hart's peasant workers in Donegal. But we are not concerned so much with the measure of her success as with the methods by which it has been achieved. First came the admirable idea of setting the people to work upon something which would not interfere with their existing occupations. That is the cardinal principle of the whole scheme; the object being to enable them to live where they are, and not to draw them off to any "centre of industry." Having decided upon the revival of the old cottage industries, Mrs. Hart's next determination was to make the articles produced as excellent and as genuine as possible. To do this it was necessary not only to teach the peasants the arts they had lost, but to impose upon them the hard discipline of nonpayment for faulty work. Harrowing tales might be told of rejected stockings, jerseys, and even long lengths of tweed; but the victims of Mrs. Hart's inflexible rule have come to be deeply grateful to her for compelling them to produce "nothing but the very best." The

patience and firmness necessary for this rigorous insistence upon good work are scarcely conceivable. But that they were combined with a happy power of acquiring the confidence of the people, they might have wrecked the scheme altogether ; certainly they would have done so if applied in a harsh unsympathizing manner. Having at length succeeded in producing goods of the required quality, Mrs. Hart began to look round for a market ; and she found one in the great London establishments, to the managers of which the new Irish tweeds and hosiery were a revelation. From small beginnings the enterprise has grown to something very considerable. We have inspected the last balance-sheet, and it shows an annual turnover of about £6,000. The whole of that amount, less the cost of the raw materials and the working expenses, flows in a steady stream into county Donegal ; with what effect upon the material condition of the people may be imagined. Not only the volume but the scope of the enterprise has gradually been enlarged. At first only the home-grown, undyed wools were used ; but now Mrs. Hart sends over large consignments of wool, and she has taught the peasants how to obtain fast

vegetable dyes from the natural substances of their own neighbourhood. Thus, where formerly the people were starving in idleness, there is now a busy population ; where the industrial habit had died out, it is now active ; where there was poverty, there is comparatively plenty ; where only labour of the rudest kind was practised, there is a skill in handicraft and in the utilization of natural products, even beyond that of which the ordinary skilled English workman can boast.

Into all the details of Mrs. Hart's undertaking we cannot enter. They would need a volume to themselves ; and, indeed, we hope that some day the full story may thus be told. Besides, it is essential for our purpose not to lose sight of the main facts and principles. Here we have an industry created where none existed before, by methods which are applicable to almost every other part of rural Ireland. But this movement has been supported throughout by private effort, acting under the stimulus of pure philanthropy. If it had been a merely commercial speculation, it would have found imitators long ago ; and we desire to put forward very prominently the fact that, although the movement began in philanthropy,

it has now—after less than three years' work and the investment of a relatively moderate capital—become a commercial success. The employment of the same means would lead to the same result in any part of Ireland. There is room for a very large extension of the work even of the Donegal Industrial Fund. A certain class of trade cannot be taken up at all, because of insufficient capital. In these days, when money is “eating its head off” for want of investment, it ought not be difficult to find capital for the development of cottage industries in Ireland, even looking at the matter from a thoroughly commercial point of view. If a gold-field were discovered in the west of Ireland, there would be a rush after it. But Mrs. Hart has discovered something much more valuable—the existence of a vast field of cheap labour, labour which can be trained to almost anything, but especially to such industries as the people can work at in their cabins and in their spare time. Hand-work in Ireland can compete with machine-work in England, even as to price; while the quality is immeasurably superior. Will no one employ willing and capable hands that are glad to earn 3s. or 5s. a week in making goods of universal

demand? That is the one point we wish to emphasize. Of course, capital alone will not do. To the capitalist who thinks of embarking on the enterprise we should say, "First catch your Mrs. Hart." But there ought not to be much difficulty in finding persons capable at least of imitating Mrs. Hart's methods, and the closer the imitation the better.

A somewhat similar scheme was set on foot in 1884 at Garry Hill, on Lord Bessborough's estate at the foot of Mount Leinster, County Carlow, by Mrs. Edward Ponsonby and a few other ladies. The cottagers in and around the village have been taught to make embroidery and open work on Irish and German damask and linen from old Italian, Greek and Turkish designs. The work was originally done by women, but now girls from twelve to sixteen years of age are found to be very quick in learning the stitches, and are very eager to be employed. The purpose of the work is to ornament tea-table cloths, chair-backs, cushion-covers, d'oyleys, curtain borders, etc ; and apart from the fidelity with which the beautiful designs are followed, the work is done with marvellous care and skill. Thread lace made on

pillows was also introduced at Garry Hill this year. The number of women and girls at present employed is not very large, but it is rapidly increasing ; and the work is sold by Debenham and Freebody, and privately by Mrs. Ponsonby, at 15, Queen Anne Street, Cavendish Square. The success which has already attended the scheme makes one hope that it will have a large extension in the future. It certainly proves that the Irish lace and embroidery industry might be very much increased among the peasantry. Limerick is perhaps its chief seat at present ; but there really is no need for a "centre." Suggestions for improving the industry have been made, such as providing technical schools and art knowledge ; while, of course, a commercial organization would have to be instituted.

With regard to bee-keeping and poultry-raising it need only be said that the west of Ireland is too wet for bees, but that in the south and east the climate is suitable for the production of excellent honey, while almost everywhere poultry could be kept with profit. There is already a large export of eggs ; and this would always be the main source of revenue from poultry—at least, until a class had been created which could afford to eat geese,



---

turkeys, ducks and fowls. Speaking generally of all the industries which the people can take up in their own homes, it may be said that the cheapest labour in the land is available, if only some one will undertake to train it, to pay the wages, to provide the raw material, and to find a market for the products. And we must not forget that cottage industries have a very general as well as particular importance. When we consider the problem of reviving the great manufactures, we have always present to the mind the fact that to an almost incredible extent the industrial habit has died out in Ireland ; and there is no surer method of resuscitating it—perhaps, indeed, there is no other method—than that of training the people to spend their idle hours in the practice of those simple but beautiful handicrafts which used to be the pride and boast of every Irish cabin.

## CHAPTER XIV.

## LAND IMPROVEMENT.

Abortive Discussions in the Past—Importance of Reafforestation—Suggested Shelter-belt along the West Coast—Functions of Forests—The Duty of the State—Drainage of the Great Central Plain—Failure of Previous Schemes—Proposed Drainage Boards with Special Powers—Benefits to be expected—Climatic and Hygienic Effects—Obstructive Tenants—Land Reclamation—Experiments in various Rivers and Estuaries—Particulars as to Sligo Estuary—Reclamation of Sand-hills—Lord Palmerston's Experiment—Ireland's "Reserve Claim."

THE question as to how far the soil of Ireland might be improved and its productive area extended by large schemes of drainage and reclamation has long been discussed by scientific, economic and political authorities. But no conclusion more satisfactory than that "something ought to be done" has ever been arrived at. Successful experiments have been made, but they have not inspired imitation. No doubt—though we wish to avoid this matter as far as possible—the disturbed state of the country

has had a freezing effect upon enterprises so costly and so slow to mature. That, however, is, we hope, a temporary difficulty only ; and if we ignore its existence, it is not because we are insensible of its evil influence in the past, but because we believe it does not necessarily belong to the conditions of the future. In connection with this branch of the subject, we may refer back to the question of reafforestation, already considered in the chapter on " Timber and Peat." It was there dealt with mainly as affecting the supply of timber ; but it is obvious that it cannot be excluded from any scheme for improving the general fertility of the country. To shelter exposed tracks of land, to regulate the supply and the distribution of moisture, to maintain the productive energy of the soil and increase its bulk—these are some of the functions assigned to forests in the economy of Nature. Apart altogether from the timber supply, forests are as necessary to the habitability of a country as are sunshine and rain, hills and plains, lakes and rivers.

Ireland is remarkable for the unity of its physical structure. The centre of the island forms a broad, level plain, broken only by lakes, and traversed by one large river, round which runs a

circle of hills and low mountains, which form a wide belt along the northern and southern shores, and a narrower belt along the eastern and western coasts. On twenty-eight days out of every forty-five the wind blows from the west, laden with the vapours of the Atlantic. There is rain in Ireland on an average of 280 days in the year. The clouds, instead of being caught by the low hills on the western coast, are carried over the great central plain, with the result that the difference between the annual rainfall on the eastern and western coasts of Ireland is only nine inches. That is in itself an advantage, and only needs to be properly utilized to be made of enormous benefit to the country. What is needed is to make this widely-distributed moisture fertilizing. At present it simply washes the soil down from the hills into the plain, where it pours into the loughs and rivers, or stagnates into bog. To hold the moisture in the natural reservoir of forest leaves, and to withdraw any superfluity of it which finds its way into the plain, is the one great necessity ; and the way to supply it is by extensive replanting and by a comprehensive scheme of arterial drainage. With one remark, we will finally leave the subject of

replanting. The western coast of Ireland and the tracts immediately inland suffer greatly from the heavy winds. It is estimated that the cost of protecting them by a shelter-belt of pine forest would be more than balanced by the increased value of the land so sheltered. Similar forest belts have been planted in Denmark with the very best results. Besides keeping off the high winds and heavy rains, the forest would exhale coolness in summer and warmth in winter, thus greatly equalizing the climate. The western region would be made more habitable, climatically as well as industrially. But of course a work like this could not be undertaken by private persons. If it be a good thing to protect the west of Ireland from devastation by winds and waters, it is the duty of the State to do it, no less than it is the State's duty to protect the country against foreign invasion. Or perhaps a better analogy is provided by the dykes of Holland, all of which were made and are maintained by the Government.

How to drain the great central plain of Ireland is an immensely difficult question. We do not include in it the reclamation of bog-land—mere drainage will not suffice for that—but the rescue of

land which is in danger of becoming bog, or which is so marshy as to be practically valueless. Of course the subject is an old one. So long ago as 1715 an Act authorizing the cutting of canals in Ireland was passed, in the hope that the canals would serve the double purpose of providing inland navigation and draining the country. Possibly these anticipations might have been realised had not the sapient canal-makers of that time carried the canals above the level of the bogs. It may be that this failure to make water run uphill has prevented other efforts from being made; but at any rate no great national scheme of drainage has ever been attempted since 1715. There have been some small arterial drainages connected with the waters of the upper Shannon, and two or three other places, but nothing upon an adequate scale. It is therefore not fair to say, as is said sometimes, that efforts to drain Ireland have been made with the uniform result of failure. The fact is that the first consideration in the works which have been executed on the canals and rivers of Ireland has always been the navigation, as may be seen from the circumstance that many of the rivers and dams are actually the cause of floods in

certain districts, by penning the water up until it rises higher than its natural level. In other districts the land is flooded in consequence of the rivers being choked with soil washed down from the uplands by the heavy rains. The only rational plan is to divide the central plain into drainage areas according to the levels, to place each area under an officer or a Board empowered to carry out the work compulsorily (respecting existing rights, of course, but overriding frivolous objections), and to levy a rate upon the area sufficient to pay off the cost in thirty or forty years. The duty of the Board or the officer would be, not only to construct and maintain arterial drains, but to assist the farmers in connecting their own drains with the main system, and to prevent flooding, whether from artificial or natural impediments to the free flow of the existing watercourses. At present, no drainage scheme can be carried out except with the consent of two-thirds of the landowners; but as they have to bear the whole cost if it fails cannot raise the rent if it succeeds, and have now, in many cases, less interest in the land than the tenants have, their consent is difficult to get. In place of this, we might substitute the consent of

the occupiers, for they alone have sufficient direct interest to induce them to accept the burden of the rate. The Land Act of 1881 destroyed the machinery for carrying out arterial drainage in Ireland; and a complementary Act ought to be passed throwing upon the tenant the obligations which should rightly be attached to the improved conditions of his tenancy.

A word may be said as to the benefits which would be conferred on Ireland by a complete system of arterial drainage. It is, we believe, the opinion of Professor Tyndall that the mean temperature of Ireland would be raised by four degrees. The bog-land, which is beyond hope of immediate reclamation, would be relieved of much of its moisture, so that the peat would be more readily available as fuel. That part of the bog-land which is not too far gone would be suitable for the growth of osiers and pines. The marshes would become meadows. Land now employed in tillage would become more fertile, and the crops—especially the potato crop—less liable to disease. The streams would increase in volume without flooding; if deeper water were wanted, it could be had by dredging the bottom instead of building weirs.



The health of the people would improve ; ague and rheumatism, twin plagues of the peasantry of the plain, would disappear. The cattle and sheep would yield more meat ; butter and milk would be abundant. There is indeed hardly any limit to the advantages. Effective drainage would revolutionise two-thirds of the face of the country, by its direct influence upon the low-lying land, and its indirect influence upon the rest. But if we are to undertake this great work, we must have “no nonsense”—as, for example, when a tenant, who would not exchange a bit of his land for a bit of some other tenant’s, put stepping-stones across the drain to give access to the piece of his holding with which he would not part, and so stopped the drainage. The boundary line was in the shape of an S ; the drain intersected the S lengthways, and the tenants on either side were asked to exchange the divided pieces, so that the drain might form the boundary. Rather than do that, they choked the drain.

The reclamation of waste lands is of course intimately connected with all that we have said respecting drainage and afforestation. It will not be necessary, therefore, to do more than glance at

one branch of the reclamation question which lies outside the subject of tree-planting and drains, and to give a general idea of the area over which reclamation is possible. Along the banks of some of the rivers (especially the Shannon), along the shores of the estuaries and loughs, in the bays and creeks of Ireland, there is a vast expanse of amphibious territory, which is neither land nor water. The soil, or mud, lies under a few inches or perhaps a foot of water ; some of it is more often dry than wet. Its extraordinary fertility has been amply proved, and nearly all the experiments hitherto made with it have been successful. In the estuaries of the Shannon, the Suir, the Nore, and the Barrow, as well as on Lough Foyle, Lough Swilly, and elsewhere, meadows may be seen which were once sheets of mud and marsh. Take the Sligo estuary as an example of what might be done. In that estuary there are 4,000 acres available for reclamation, which would grow any kind of crop. The work would have to be done gradually, so as to allow the sea to throw upon the land to which it would still have access the deposit which would have gone upon the land already reclaimed. The cost would be about £20 per acre, and the land

would be worth £2 per acre annually. Moreover, the approach to the harbour would be improved for navigation, the coast fisheries would be more accessible, and the atmosphere would be rendered less humid and foggy. Then there is another kind of reclamation, which may be called reclamation and rescue. There are about 300,000 acres of sand-hills round the coast, and their tendency is to advance inland. Now it is possible to prevent this mischief by planting the sand either with trees or with bent grass. The roots hold the sand and prevent it from blowing. This has actually been done at Mullaghmore, on Donegal Bay. It was done by Lord Palmerston in 1854, and now the bent and other herbage, besides stopping the drift, is able to support about 300 head of cattle on an area of 420 acres. Instances might be given in which people living on the hills near the coast have actually been driven off by the blowing sand, which covered up all the tillage and turned land that had been productive into a desert. In favourable circumstances—such as a wet season, to keep the sand together and fertilise the seed—this sort of waste land can be reclaimed in two years ; in unfavourable circumstances the

experiment may fail altogether. But perhaps it is not necessary to go further into this question, although it is highly interesting and important as regards the future of Ireland. It is essentially a question of the future. There is already sufficient land under tillage to support the people, and it is doubtful whether reclamation on a large scale would be profitable in the present depressed condition of British agriculture. For the present, it is probably best to attend to the improved cultivation of existing farms rather than sink money in the reclamation of waste lands. At the same time, it will do us no harm to keep in mind the fact that Ireland has a "reserve claim" of six millions of acres, which may by-and-by be called upon to furnish with fuel, and timber, and clothing, and food, a larger and more prosperous population than she has ever seen.

## CHAPTER XV.

### MOTIVE-POWER AND MACHINERY.

Backward state of Ireland—The Cost of Coal—Water-power—Instances of its Existence—Means of employing it—Advantage even in small operations—Windmills—Peculiar circumstances as regards Machinery—Differences between Ireland and England—Cheapness of Labour in Ireland.

IT is a singular fact that industry declined in Ireland, when in England it was advancing by rapid strides. The introduction of steam, which revolutionised Industrial England, had very little effect upon Industrial Ireland. The decadence which had set in towards the end of the last century could not be arrested even by the enormous development of productive power due to the labours of Watt, Arkwright, Stephenson, and the rest. To this day Ireland is far behind almost every other civilised country in the employment of mechanical power. The excuse made is that Ireland has to import the great bulk of her

coal; but no excuse could be more fallacious. Most of the British coalfields lie along the West Coast, as in Wales, Lancashire, Cumberland and Lanark, and the cost of carriage between the British and Irish ports is far less than between the British coalfields and many parts of Great Britain. Coal is cheaper in Dublin than in London; it is almost as cheap in Cork and Waterford as in Bristol. The cross-channel freight for coal between the Welsh ports and the South of Ireland is often ridiculously low, though the fact is not to be wondered at when we look at the class of craft—not much better than Thames barges—employed in the trade. We do not suppose that coal can be equally cheap in the inland towns of Ireland, but certainly the fact that most of the coal burnt in Ireland has to come from England is no bar to the free use of steam power in the centres of industry along the coast. It would be absurd to contend that Dublin, Belfast, and Cork labour under any disadvantage in this respect which does not apply to many a flourishing industrial centre in England and Scotland. We take it therefore as a matter in no need of further argument that steam power is as available in parts of Ireland as in many parts

of England. The same of course may be said of machinery.

But with regard to the inland regions there is a difference, and it is wholly in Ireland's favour. Few countries are so well supplied with natural water power. Between Belleek, the site of the celebrated pottery, at the mouth of Lough Erne, and the town of Ballyshannon, there is water power sufficient to turn all the mills of Manchester. Again, at the falls of Doonass, between Killaloe and Limerick, there is an average available force of water of 33,950 horse-power for the 97 feet of fall, in continuous action day and night ; while between Limerick and Lough Allen it may be computed to be 38,667 horse-power. "Who can have witnessed the immense volumes of water rushing over the falls of Ballsodare, Sligo, without feeling a regret that every ledge of that precipitous fall has not beside it a busy mill-wheel? The lordly Shannon, the picturesque Blackwater, the winding Lee, the stately Barrow, and the noble Suir, all offer natural facilities for the manufacturer, such as few countries but Ireland can command."\* There are many

\* Report of Sub-Committee to the Corporation of Dublin, Feb. 28, 1885.

ways in which water-power can be applied. The most common method, namely, by means of a mill-wheel acting directly on the machinery to be driven, might often be employed in Ireland. But the power may very easily be transmitted to a considerable distance, by a turbine and endless rope, for instance, or by using water-power to compress air, the pressure being carried through tubes. Perhaps it is too early as yet to regard the storage of electricity produced by the agency of water-power as a practical process. Instances might be given in which the energy of a stream at the foot of a valley has been employed in pumping a mine 600 feet up the side of an adjoining hill ; in which an endless rope has conveyed abundant power for a large mill to a distance of more than a mile from the water-wheel, and so on. These facts dispose at once of the objections so often made to water-power, that you have to take your mill to the power, and cannot bring the power to the mill. As a matter of fact, the water-power of a river with a good fall is available for any point along its course within a distance of five miles ; and a glance at the map of Ireland will show that a very small part of the surface of the country need be left un-



supplied. By combined effort at particular places, water-power might be had in abundance for almost next to nothing. Besides, it must not be supposed that we have in view only the construction of huge water-wheels such as would be necessary for mills and mines. Why should not this store of natural force be available for smaller operations, such as thrashing, churning, preparing straw and hay for cattle, and so forth? We need only look at Holland and Belgium to see how useful a little mechanical power can be made. In places where neither a water-mill nor a windmill is practicable, the people train their dogs to go into a kind of squirrel-cage, or treadmill, and there do all the hard work of the necessary grinding, chopping, or churning operations. Even the most primitive water-wheel, made out of two planks crossed at right angles, will do an amazing amount of work.

Industries which require both power and water are exceptionally well circumstanced in Ireland. Woollen manufacture, tanning, pottery, paper-making—all these, and many others, might be given as examples. For them there exists in Ireland a combination of advantages such as should out-weigh many disadvantages. Besides,

we must remember that when once water power is laid on it is practically everlasting. The first cost is the whole cost. A steam engine may be cheaper to buy than a water-wheel and gearing; but it is much dearer to keep going.

Where water-wheels are not practicable, wind-mills might be tried. They are less to be trusted for regular working, but they are cheaper, and would in many cases answer every purpose. There is nearly always a steady wind of some sort blowing over the great central plain of Ireland, and we see no reason why its force should not be captured and turned to account on behalf of many a dying or struggling industry. This suggestion is, we believe, a new one, but perhaps it may bear fruit.

The question of the extent to which mechanical labour might usefully take the place of manual labour in Ireland is very difficult. Perhaps it varies with local circumstances. No one can say that the power loom is out of place in Belfast, but at the same time its introduction into Donegal would ruin the whole population. Generally it may be said that as long as hand labour can supply the demand for any articles it has been trained to

produce, it is wise to let well alone. If the demand exceeds the producing power of the population, then the use of machinery may be permitted. Again, while hand labour is so abundant and so cheap that it can compete with machine labour in other places, there is no reason why it should be disturbed. We believe that by-and-by the industrial energy of Ireland will bear as full development as that of Lancashire and Yorkshire ; but we must avoid over-pressure during the delicate process of rearing it from infancy to maturity. Any attempt at a forced growth would kill it. For the present, the Irish operative, working in the field, the lane, or the cabin, having few wants and much time on his hands, is glad to receive wages which the humblest British workman would regard as an insult. Even in the towns, labour is so cheap that no great advantage would be gained by introducing machinery. When wages in Ireland rise so high that the cost of the production of a given article there is greater than in England, then may machinery be safely introduced. The result would not necessarily be to lower wages or diminish employment, but to increase the productive power. To bring about that happy result there must first be a quickened

demand, and that demand will be created most expeditiously by first-rate work, such as can only be achieved after much hard drilling, after the industrial habit has been thoroughly revived, and after the fatal Irish tendencies to slovenliness and carelessness have been completely eradicated.

These ideas will, we fear, appear somewhat retrograde to English readers. The modern notion of industrial development is to set up a huge factory close to a large town with ample railway accommodation ; to divide and redivide and subdivide the processes, giving to each operative his own little bit of work and no more ; to do nothing by hand which can be done by machinery ; to have a highly organised system of distributing, checking, and collecting the work ; and, in short, to bring the whole thing down to a purely mechanical and arithmetical level. The "small man" who cannot rise to so grandiose a scale of operations is complacently told that he must go to the wall, as indeed he generally does ; and so the field is left to the sole enjoyment of the industrial giant, with his boilers, his engines, his machines, and his inexhaustible capital. But the case is different in Ireland. Big factories do not exist there, nor are

they likely to exist just yet, because the conditions suitable for their profitable establishment are absent. Large towns are scarce ; railway facilities are certainly not abundant ; and skilled labour of the factory kind could not be had for love or money. Skilled labour of the kind we had in England before the introduction of machinery can, however, be had for very little money, if pains be taken to train it ; and therefore it is to the direct employment of hand-work upon manufactures that our efforts should tend in Ireland. What we have already said as to the necessity of setting an Irishman to work must not be overlooked. He cannot yet compete with the English factory-hand in the same line. But if somebody will only set him going, his hand-work will compete with English factory-work, by sheer force of the cheapness of labour in Ireland, as compared with England. Man and machine in England, say, turn out £1 worth of goods in an hour, and the man takes one shilling of that amount as wages. Man alone will take a day to do the same amount of work in Ireland ; but the man will still be satisfied with the shilling.

## CHAPTER XVI.

## THE IRISH RAILWAYS.

Importance of the Transit Question—The Railway System of Ireland—The War of Railways upon Industry—Non-development of Traffic since 1849—Great Road Traffic even where Railways exist—Short-sighted Policy of Managers—Charges against the Companies—Classification—High and Unequal Rates—Great Disparity between Local and Through Rates—How this affects Irish Producers and Merchants—Disastrous result to Industry—Deficient Facilities—Divided Management—Necessary Remedies—How to effect them—The Belgian Government and the Railways—Extraordinary Development of Traffic under low Rates—Proposal of a State-Guaranteed Dividend in return for more liberal Management.

OF vital importance to the whole question under consideration is the cheap and rapid conveyance of goods between the different parts of Ireland and between Ireland and Great Britain. We know of nothing which has so direct a bearing on the question whether the industrial future of the country is to be a further descent into ruin or an ascent to prosperity. It will be our duty to

prefer a formidable indictment against the carrying trade of Ireland generally ; but we shall not forget whatever mitigating circumstances may be brought forward. Let us begin, however, by stating what means of transport exist. The railway system of Ireland is of uniform gauge (5ft. 3in.), and has a total length of about 2,500 miles. The Great Northern of Ireland is the largest railway system, with a mileage of 503 miles ; next comes the Great Southern and Western (478 miles) ; then the Midland Great Western (425 miles) ; then the Waterford and Limerick (269 miles) ; the Belfast and Northern Counties (130 miles) ; the Dublin, Wicklow and Wexford (135 miles), and others. The eastern half of Ireland is fairly well served. A line drawn from Londonderry to Cork would have on its eastern side seven-tenths of the whole of the railways of Ireland. But there is a still more striking difference between the two sides. From Bantry, in the extreme south-west, round by Cork, Dungarvan, Waterford, Wexford, Wicklow, Kingstown, Dublin, Drogheda, Dundalk, Belfast, Coleraine, and Londonderry, an almost continuous line of railway follows the coast, just as the Brighton and South Coast railway follows the

shores of Hampshire and Sussex. This feature is conspicuously wanting in the western section. Lines run out from the centre of the island to various points on the western coast, as at Sligo, Ballina, Westport, Galway, Limerick, Foynes and Tralee; but the western towns have practically no railway intercommunication. The only exception is in the case of the line between Galway and Limerick. Thus the western railways of Ireland do not serve the coast nearly so well in proportion to their length as do the lines on the eastern section. How to remedy this defect for the benefit of the fisheries and other industries which we hope to develop in the west of Ireland is a question that almost calls for special attention.

Dealing with the railways as they stand, what do we find? That although the cost of construction, of maintenance, and of working, is considerably below that of the English railways, the Irish lines starve themselves, and the districts through which they pass, by a penny-wise pound-foolish policy, which renders them a hindrance rather than a help to the industrial progress of the country. Their tariffs are calculated strictly on the basis of the existing traffic, the traffic that was already there when the



lines were made, and not on the basis of the traffic which might be created. We assert confidently that half of the capital expended on Irish railways is practically unutilised. Too few trains are run, and the rates and fares are absurdly high. Five trains a day each way between Dublin and Galway are thought sufficient ; the single third-class fare is equal to about  $1\frac{1}{8}d.$  per mile. That is a sample of the management of Irish railways generally. There is a better service, at  $1d.$  per mile, between Dublin and Belfast, but then there are two ways of doing the journey. Most of the railways of Ireland have no competition. What is wanted is more liberal management—more trains, better carriages and lower rates, so as to create and induce traffic. Everybody knows it would not pay to run a single omnibus once an hour, between even the Bank of England and Charing Cross ; but to run omnibuses every half-minute or so pays remarkably well. Passenger traffic, however, is not so much in question as goods traffic. That is where the burden of our charge lies, for it is alleged that numerous industries are rendered impossible in Ireland owing to high rates of carriage, and that identical foreign industries are positively

encouraged by freights which are denied to Irish producers.

It is a long story—this story of the war waged by Irish railways upon Irish industries. It began when the railways were constructed, and has gone on ever since. The first consideration with the original shareholders, naturally enough, was how to make a profit on their investments. They calculated the cost of the line and of keeping it going, and they estimated the probable traffic. The rates were then fixed so as to show a profit. That policy has been steadily pursued down to the present day, with the very intelligible result that the average receipts per mile of the Irish railways have practically remained at the same figure from 1849 to 1886. Railway traffic, in other words, has increased with the increase of railways, but there has been almost no increase in the amount of traffic per mile of line open. It follows that the introduction of railways into Ireland has not conferred upon the community anything like the benefits enjoyed by other countries. They have simply provided a new and perhaps speedier means of conveyance, but they have not created traffic where none existed before. And they have not

even absorbed all the traffic which already existed. The amount of cartage done in Ireland along routes traversed by railway lines is almost incredible. Even for distances of twenty and thirty miles the road is found to be preferable to the rail. There are many roads in Ireland along which traffic passes in a continuous procession, notwithstanding that railways run parallel to them, and are worked to no more than perhaps a tenth of their carrying power. In all other countries, the locomotive has beaten the road carrier out of the field. In Ireland the position is reversed. All this is the consequence of the short-sighted policy which thought more of earning a secure dividend by putting upon the existing traffic the heaviest rates it would possibly bear, than of developing the traffic by adopting the very lowest rates consistent with reasonable expectations. "Here," said the railway companies, "are goods worth £5,000 which *must* be carried by us. In order to earn for ourselves a dividend of 5 per cent. we will exact from them a toll amounting to £50." It never occurred to them that it might be possible to earn a dividend of 10 per cent. by carrying £20,000 worth of traffic for £100. The simple process of quadrupling the

traffic receipts by halving the rates, and so doubling the dividend, never entered into their calculations. Yet, in putting the case thus roundly, we by no means exaggerate the general experience of the carrying trade of the world. We said just now that the average receipts per mile of the Irish railways has scarcely advanced since 1849. Contrast this with England, where those receipts have multiplied more than fourfold in the same period, or with Scotland, where they have increased nearly threefold. Bear in mind that we are not speaking of the gross receipts, but of the average amount of traffic carried over each mile of line open. Every mile of line open in England in 1849 earned, roughly speaking, £1,000 a year. To-day, by the enormous increase of traffic, every mile open earns over £4,000 a year. In Ireland, proportionately to the length of line open, there is no more traffic now than there was forty years ago.

All that time the railway companies have been squeezing profits—or, in some cases, only endeavouring to squeeze profits—out of a trade that needed the most tender fostering, the most generous encouragement. They have been slowly killing the goose, which, after all, has not been very

prolific in its yield of golden eggs. And indeed, how could it be, with the grip of the exacting shareholder slowly closing around its neck? We have no hesitation in saying that railway management in Ireland has been a libel upon the business aptitudes of railway men in general. There certainly have never been any Allports in Ireland. A few exceptional efforts have been made on certain lines for the encouragement of trade, but never in the form of a substantial reduction in the rates. They were rather in the nature of an offer to add a storey to a dwelling-house, the occupier of which asks for a reduction of rent.

The principal charges brought against the Irish railway companies at the present time are these : First, their classification of merchandise is higher than the English classification. Second, their rates, though occasionally lower on the same numerical classification, are almost invariably higher on identical descriptions of goods. Third, the rates are flagrantly unequal. Fourth, an unfair advantage is given to goods from other countries, by through rates, which, in some cases, make the carriage from Great Britain and Europe to an inland Irish town cheaper than to the same town from Irish ports

through which the foreign goods pass *en route*. Fifth, that for certain descriptions of traffic, of vital importance to Ireland, proper conveyance is not provided. Sixth, that by divided management and conflicting interests traffic of all kinds is hindered and hampered in every conceivable way. Let us deal with these points separately.

1. *Classification*.—For through traffic between England and Ireland, the English classification is adopted. That is a grievance which comes under the fourth head. Comparing the English with the Irish local classification, we find, for example, that hay, fish, wool, worsted yarn, green flax, flax straw, jute, marble, pottery, grass seed, artificial manure, and other important articles of traffic are classed higher in Ireland than in England, and are accordingly charged upon a higher scale. Comparing different items in the Irish classification, we find that wool, grass, seed, hay, and other goods which are carried with little trouble or risk, are classed equally with such merchandise as the finest cloth, macaroni, rennet, &c., if not higher. In short, the Irish classification, from the beginning to the end, is a puzzle and an injustice.

2. *Rates in England and Ireland respectively*.—

The third-class passenger fare in England is 1*d.* per mile ; in Ireland it averages  $1\frac{1}{8}$ *d.* In England, the difference between third- and second-class fare is about 25 per cent. ; in Ireland it is 50 per cent. In England, the difference between second- and first-class fare is about 25 per cent. ; in Ireland it is 33 per cent. Can we wonder that, whereas in England 20 per cent. of the population travel by rail, in Ireland the percentage is only  $3\frac{1}{2}$  ? Then, as to goods. Higher classification means of course higher rates ; but even when the classification is identical, there is sometimes a higher rate in Ireland. It is perhaps not necessary to give examples. On the whole, railway freight is quite a third higher in Ireland than in England.

3. *Inequality of Rates.*—This evil is so widely prevalent that it is almost difficult to particularise. For equal distances the most absurdly varying rates are charged. In some cases the longest distance has the lowest rate. To send coal from Belfast Quay to Annaghmore (35 miles) costs 4*s.* 6*d.* per ton ; but it can be sent to Armagh (39 miles) for 3*s.* 6*d.* To Glasslough (49 miles) it costs 5*s.* 3*d.*, but to Monaghan (55 miles) only 4*s.* 8*d.* Take again artificial manure—Belfast to Sligo (136

miles), 19s. 2d. per ton ; Belfast to Enniskillen (87 miles), 19s. 9d. And so on all over Ireland.

4. *Through Rates v. Local Rates.*—This is the greatest grievance of all. The Irish railway companies are under the thumb of the English railway companies, and it is the aim of the latter to get traffic for themselves by making English goods cheaper in Ireland than are the Irish goods. Consequently they compel the Irish railways to carry English goods from the Irish port of arrival into the interior at a much lower rate than they charge for goods which do not come “through.” By the operation of this arrangement, the London, or Birmingham, or Manchester manufacturer is enabled to beat the Dublin, Belfast, or Cork manufacturer in all the markets of Ireland. We will give one flagrant case. To carry flax from Stranorlar, in county Donegal, where it is largely grown, to Belfast (100 miles) costs 17s. 6d. per ton. But it can be brought from Ghent to Goole or Hull, then taken overland to Fleetwood, and from thence shipped to Belfast, for 21s. 6d. per ton—only 4s. more for an enormously longer distance. Perhaps a still more intelligible illustration will be found in the passenger fares between



London, Dublin, and Cork. The return first-class from London to Dublin is £4 15s., and from London to Cork, £5 16s.—a difference between Cork and Dublin of £1 1s. But the return first-class from Dublin to Cork is £2 9s. 3d., showing an advantage of £1 8s. 3d. in favour of a through passenger. The case is the same with regard to goods. British and Continental goods pay next to nothing for transit along the Irish railways, and those railways, to recoup themselves, levy an extortionate toll upon their local traffic. The effect is disastrous both to the merchant and manufacturer in Ireland. Most of the Irish merchants, though domiciled in Dublin, Belfast, and Cork, are really London, Liverpool, or Glasgow merchants. They can buy goods in England, and consign them direct to their Irish customers cheaper than they can consign purchases made in Ireland, so greatly are the through rates in favour of the foreign producer. As for the Irish manufacturer, he cannot possibly thrive, unless, as in the case of the linen-mills of Belfast, he is lucky enough to have an export business which renders him independent of home markets. The paralyzing influence of this state of things even upon

the working of Ireland's natural resources, such as her minerals, her quarries, her pastures and her fisheries, let alone her manufactures, may easily be imagined.

5. *Deficient facilities.*—Special reference is here intended to the fish, dead meat, poultry, butter, and similar industries, of which something has already been said.

6. *Divided management.*—The mileage of the railways of Ireland about equals that of the London and North Western. Their capital amounts to £36,000,000; that of the London and North Western is £100,000,000. The vast system of the English line is controlled by one board of thirty directors. The Irish railways are under thirty-nine boards, each consisting of from four to fifteen directors. There are chairmen, deputy-chairmen, general-managers, secretaries, locomotive-superintendents, and so forth, for all these concerns, and the wonder is that there is not more confusion, more getting at cross-purposes, and more want of cohesion, than we actually find. The remedy would of course be the consolidation of the various lines, not necessarily under a single management, but under a reasonable number, in accordance with the

territory occupied and the identity or diversity of interests.

With the concentration and unification of authority most of the evils we have pointed out would be on the way to extinction. A more harmonious, a broader, and a more enlightened policy would prevail; a bolder stand would be made against the great English companies; the local and the through rates would be adjusted fairly to the local trade; the power and the will to provide better facilities would be strengthened; circulation would be restored to the commercial blood of the nation. Of course, we shall be told: "Yes, but the wholesale reduction of the rates, which would be the first step in any real reform, would extinguish dividends, at all events for the present, though they might return with increase in the course of time. How are we to tide over the interval? Our shareholders cannot afford to wait—many of them have nothing but their dividends to live upon—they must take the pittance of the present, for they cannot starve while the harvest of the future is growing." No objection can be more reasonable; we will see what can be done.

In 1856, the Belgian Government took a number

of the railways of that country in hand, and at once reduced the goods rates by from 25 to 77 per. cent. In eight years the quantity of goods carried over those railways was doubled, the receipts were increased by 50 per cent., and the profits were quintupled. In 1864, the passenger fares were also greatly reduced—in many cases to less than a half. Two years after the change the number of passengers rose by a million and a half yearly. We do not suggest that the State should take over the Irish railways. But we believe that in return for a guaranteed interest of 3 per cent. upon their capital, the Irish companies would consent to amalgamation, to a trenchant revision of rates, to an extended provision of facilities, and to such control as the State might institute on principles of public policy. Suppose the experiment were tried for ten years: the amount of the annual guarantee, even if the whole of it had to be paid, would be £900,000. Actually, the cost to the State would probably not reach half a million—less than the cost of her Majesty's Stationery Office.

## CHAPTER XVII.

## THE FINANCIAL SYSTEM.

Total Capital of Ireland—Present Distribution and Employment—Five-sixths Invested Abroad—Illiberal Policy of Irish Banks—Contrast in the case of Scotland—Cash Credits—Assistance in various Forms of Business—Need of Banking Competition in Ireland—Reference to Loans to Fishermen, all repaid—Loans to capable Men for Manufactures—General absence of Credit in Ireland—Markets for Irish Produce—English Agents at the Fairs—Their Monopoly—Advances made by them to Farmers—The “Gombeen” Man—Usury and Banking.

THE total capital of Ireland is estimated at 276 millions sterling. That is supposed to be the value of so much of her natural resources as she retains, after having provided for the sustenance of her population. It is the balance in hand which remains as the fruit of long centuries of toil, and not only of toil, but of much tribulation. It amounts to £53 per head for every man, woman, and child in the country. But is it available in anything like a sufficient distribution for

the prosecution of industry, for the increase of wealth, for the promotion of the material comfort of the people? In brief, where is it, and what is it doing? A comparatively small portion exists in the form of money. Nearly thirty millions come under the heading "crops"; seventy-three millions are set down as "live stock"; thirty millions have been sunk in the construction of railways, and so on. Yet Ireland is not altogether badly off even in the matter of hard cash. The paid-up capital and reserves of the Irish banks, the gold and silver held by them, the deposits and amounts to the credit of customers' accounts, the notes of the banks in circulation, the deposits in the Post Office and other savings banks, the investments in Government and India stock:—these amount to the respectable total of nearly eighty millions. We take this last figure to represent the actual working capital of Ireland, the amount which she is free to embark, if she chooses, in any undertaking for which it may be needed, and which she ought to embark, before all else, in the development of her own commerce and industry.

Now, instead of that, we find that five-sixths of the capital of Ireland is invested out of Ireland.

It is lent to foreign governments and to foreign speculators ; it is being used for the construction of railways in Nicaragua and waterworks in Juan Fernandez—anywhere and everywhere, indeed, except in the country that created it. The Irish banks, which hold the greater part of the money, will not, or at any rate do not, lend it for the promotion of Irish industry. They will trust anybody rather than an Irishman, unless he happens not to be in Ireland. If they lend at all, it is upon a three months' bill, with crippling security and at usurious interest. They refuse to the Irish people the credit which the Irish people cheerfully—and sometimes too confidingly—give to them. Not once, or even twice only, have the Irish had to repent of the trust they put in anything calling itself a bank ; yet this confidence has never been reciprocated. We make the plain statement that Irish banking, if it deserves the name, has done more to retard industry than to encourage it : an ill-return for the profits which the banks have made for themselves out of the foreign investment of Irish money. Compared with this, the sins of the men who draw incomes from Irish land and spend them abroad, dwindle into insignificance. Capital and the use of capital

are practically the same thing. Looked at from that point of view, Irish banking has despoiled Ireland.

The case of Scotland is so marked a contrast that it not only heightens the offence, but suggests a remedy. We need not go into the details of the Scotch system ; it is sufficient to say that in Scotland a man's character, ability, opportunities, knowledge and connections are rightly considered as equivalent to capital, and the Scotch banks regard it as their function to transmute it for him into money. That is the basis of their system of "cash credits." Upon a guarantee by a couple of fairly substantial friends, they advance a young man money to start him in life ; upon evidence that a profitable bargain can be struck, they provide the capital ; upon any reasonable representation that cash can be turned over with advantage, they unhesitatingly supply it. Any man who can discover a paying channel for capital to flow in is a welcome visitor to the bank parlour. The bank is satisfied with its five per cent., and does not grudge the borrower the profits he may make out of the business he has created or discovered. The result is that every Scotchman is on the look out for opportunities of a profitable turn-over. The



amount of capital that may be necessary is immaterial : he knows that he has only to ask and he will receive. Of course speculative business is excluded from these operations. Let us give a case in point which came within the writer's experience some years ago. A young man had a chance of buying goods for £300, cash down, and of selling them for £650 on three months' credit. There was no doubt the purchase money would be paid when due. He did not possess 300 pence. But he laid the matter before the manager of one of the leading Scotch banks, deposited the papers relating to the transaction, gave the bank a lien upon the £650, and was handed a cheque which he was authorised to make out, as upon his own account, for £300. At the end of the three months he paid in the £650 and had £350 to his credit, less five per cent. on the loan. Such "business" as that would be laughed to scorn in Ireland. Yet the Scotch banks do it every day, and they are among the soundest banks in the world.

The only way to compel the Irish banks into reasonableness is by competition, and we are strongly in favour of establishing in Ireland a bank authorised to advance money on the personal

credit, and on the opportunities of making profit, of the Irish people. If the unhappy state of the country prevents private capitalists from coming forward, the Government should at least use its influence to re-establish confidence in the honesty and the energy of Irishmen. We have seen what wonders have been worked by loans to Irish fishermen—every penny repaid, and prosperity following in the wake of opportunity. We do not despair of similar miracles in other branches of enterprise. Loans might be made in aid of agriculture and of manufactures, the one essential being that they should be granted only to men of character, and capable of accomplishing what they undertake. Probably they should be men prepared to embark some capital of their own, and, as a rule, the experiment should be made on a fairly large scale. Better lend a thousand pounds to one man than ten pounds each to a hundred. A hundred pounds in the hands of one capable employer is worth more to the men he would employ than one pound in the hand of each of them. Competition would soon relax the grip of the existing banks upon Ireland's capital. Gradually it would flow back—all that was left of it—from Nicaragua and Juan

Fernandez, to quicken again the pulse of industry in Ireland and stimulate its energies.

The outside world has no conception of the primitive financial condition of the sister island. Save in the towns, all transactions take place in cash. Cheques, advance notes, bills of lading, all the devices for expressing and transferring value without recourse to actual bullion—these are unknown in many parts. The agents who go round to the fairs and buy up produce pay in solid coin of the realm. Now “ready-money,” though sound enough in a way, hinders trade, because it locks up capital. A man who will not sell except for cash, very often loses a chance of turning his capital over again, or at all events postpones it. A bill of lading, for example, enables a merchant to turn over the value of a cargo while the cargo itself is on the high seas. These elements of commerce are not understood in Ireland. But they will soon be grasped as a freer circulation of capital takes place in the country. Side by side with a liberated capital will arise a new creation—Credit : a bad master, no doubt, but an extremely useful servant.

We may associate with this subject one of almost equal importance—the question of markets, using

the word in its most extended sense. Ireland is abundantly supplied with fairs and markets, from the Great Munster fair of Limerick and the cattle fair of Ballinasloe to the humble gatherings of men and beasts which take place weekly in the remote villages of the west. Flax, corn, hay, cattle, horses, sheep, pigs and butter, are thus sent on the first stage of their journey to the consumer. Most of this trade is done by the agents of English houses, who visit the fairs regularly and are known to the country people. This acquaintance gives the agents a monopoly which hardly anything can shake. Even an offer of a higher price will frequently not avail to draw an Irish farmer away from the man with whom he has dealt time out of mind and whose money he knows to be good. Besides, who would sell to a casual stranger at the risk of being for ever "cut" by the regular and old-established trader? Thus these middlemen have a very real hold on the producers, and a ring of them might for a time buy up the whole produce of Ireland at any price they chose to agree upon. There is reason to believe that they do not often make that use of their exceptional position—they pay a fair price in accordance with the supply in

the fair or market and the advices sent them from headquarters as to the demand. But many of them have a hold upon the farmers in another way. They allow the farmers to get into their debt. It is so easy to ask for an advance on account of a thriving heifer, or a fine field of flax, and so easy for the agent to lay out a little additional capital a month or two before the fulness of time. These are the men who really "finance" Ireland. They are only one remove from the "gombeen" man, the petty usurer who takes weekly payments and generally manages to clear 30 per cent. Between them, the market agent and the "gombeen" man conduct all the business which ought to be done by the banks, and the poor farmer, as may be expected, derives very little advantage from it. In short, the marketing system is intimately bound up with the financial question, and the effect of the non-fulfilment of their legitimate functions by the banks is not only that the farmers and producers generally are hampered by want of capital, but are not free agents in the disposal of their merchandise, and do not receive the full value of it when at last it leaves their hands.

## CHAPTER XVIII.

## CONCLUDING WORDS.

Other Points not Touched upon—Hope for Ireland—State Assistance by Loans, Legislation, &c.—Self-Help—Consumers Helping Producers—Full Manipulation of Local Products—The English Market for Irish Goods—The Valley of Dry Bones.

WIDE as is the ground we have traversed, much remains unseen of the sad, sorrowful spectacle presented to-day by Industrial Ireland. The physical and moral condition of the people, the state of education, the various questions which have arisen in the relation of classes, the total absence of technical knowledge, the effect of emigration upon industry, the prevalence of concealed insolvency, the needs of extended railway and canal communication, the position of famine as a factor in Irish economics, the expediency of promoting industry by Exhibitions, the improvement of the dwellings of the poorer people,

the instruction of girls in matters appertaining to house-work and domestic service, the indebtedness of the tenantry to local shopkeepers, the state of the labour market, the economic relations between England and Ireland, the question whether Ireland would be benefited by Protection, the way in which local customs and superstitions act in restraint of industry, the problems connected with the tenure of land, the working of the poor law—these may be taken as examples of points which, for the present at least, we must leave untouched. Perhaps enough has been said to lead most persons to a conclusion as to whether there is really any hope for Ireland.

We believe there is hope for her. But there is a great work of reformation to be done, and it must be begun at the beginning. Take Ireland as a country of ample natural resources upon which to found the industrial edifice, and then begin, stone by stone, course by course, to rear it to completion. The resources must be developed by instructed labour and sufficient capital, directed by sustained intelligence. We have not hesitated to suggest at various points the intervention of the State. So far as money is concerned, the State may, perhaps,

confine itself to the replanting of a portion of the waste lands, the provision of harbours and landing-places, the drainage of the great central plain, the guarantee of railway dividends in return for concessions as to rates, and the making of loans for railway construction and for the encouragement of special industries like the fisheries, the woollen manufacture, and others. The question of financing the new movement, like that of transit, might, however, be largely simplified by legislation.

The other means by which the State could assist would be the establishment of schools in connection with the existing elementary schools, giving instruction in agricultural as well as manufacturing processes ; the promotion of Industrial Exhibitions ; the purchase in Ireland of goods required by the army and navy ; and the linking of Ireland as far as possible in the great chain of communication between the Old World and the New.

From this point self-help must come into play. Ireland must resolutely avail herself of the new, the unprecedented opportunities opened up to her. She must second to the utmost the efforts of those who shall make these great exertions on her behalf. She must strive to recover the industrial habit.



She must resolve that not by any fault of hers shall the experiment fail. Irish consumers must respond to the efforts of Irish producers by giving the preference to Irish products, whether of the sea or the land, the mine or the soil, the farm or the factory, the churn or the loom, the pottery or the mill. The whole nation must concentrate its powers on the full development of its resources, so that as little as possible of the labour necessary for their adaptation to human need shall be done abroad. Let Ireland make her own leather, her own furniture, her own paper, her own cutlery. She may never become a great manufacturing country, nor does she need to be. A land which produces an excess of food can afford to buy manufactures from countries like England, which is compelled to import food. For every bushel of corn, every pound of meat and every pound of butter possible to be produced in Ireland, there is an unfailing and insatiable market at her very gates. But Ireland is capable of supporting even a much larger population than can live upon the land, and there is no reason why she herself should not manipulate her raw materials of manufacture.

Let the experiment be made—not *in corpore vili*,

but upon that comely island which, loving, some of us have at times been apt to chide, forgetting her many troubles, her need of some strong arm on which to lean, her condition of almost blank despair. Stoutly led and resolutely following, Ireland may again ascend the heights. The task before us is difficult, but it is less difficult than noble, and even less noble than just. It is like going down again into the valley of dry bones, and breathing upon them, that they may live. Without irreverence one might hope to realise in Ireland a fulfilment of the promise to the house of Israel : "I will multiply the fruit of the tree, and the increase of the field. . . . I will also cause you to dwell in the cities, and the wastes shall be builded. And the desolate land shall be tilled, whereas it lay desolate in the sight of all that passed by. And they shall say, this land that was desolate is become like the garden of Eden ; and the waste and desolate and ruined cities are become fenced and are inhabited : so shall the waste cities be filled with flocks of men."

# INDEX.



- |   |   |
|---|---|
| <p>             ABATTOIRS, 25-27<br/>             Agriculture, 5, 10-43, 58-67<br/>             American competition, 11, 125<br/>             Antrim iron-mines, 76<br/>             Arigna coal-field, 75<br/>                 ,, iron-mines, 76<br/>             Arran island, 45<br/>             Avoca gold-field, 72<br/>                 ,, River, 56<br/> <br/>             BACON, 8, 30<br/>             Baltimore, 51, 53<br/>             Banks, 190-5<br/>             Barley, 12<br/>             Basket-weaving, 65, 142<br/>             Bee-keeping, 152<br/>             Beet, 66-7<br/>             Belgium, comparisons with, 2,<br/>                 169, 184, 187<br/>             Belleek pottery, 109-13<br/>             Blacksod Bay, 45<br/>             Bofin, 45<br/>             Bogs, 65, 67, 85-6, 89, 90, 93,<br/>                 156, 157-60<br/>             Boot and shoemaking, 106,<br/>                 136-8         </p> | <p>             Bottle-envelopes (straw), 65,<br/>                 142, 144-5<br/>             Bottles, 115<br/>             Bounties, fish, 53<br/>             Bran and pollard, 127-9<br/>             Brewing trade, 1<br/>             Broadhaven Bay, 45<br/>             Brushmaking, 138<br/>             Building materials, 82-3<br/>             Burdett-Coutts, Lady, 53<br/>             Butter, 8, 32-43<br/>             Butterine, 42<br/> <br/>             CANDLEMAKING, 25<br/>             Carving (bog-oak, etc.), 142, 144<br/>             Castlecomer coal-field, 73<br/>             Cattle-raising, 6, 23-31<br/>             Characteristics of Irish people,<br/>                 139<br/>             Chemicals, 119-21<br/>             China-painting, 113<br/>             Clare coal-field, 75<br/>             Clay, 82, 109<br/>             Clew Bay, 45<br/>             Clifden and Galway Railway,<br/>                 49-50         </p> |
|---|---|

- Coach-building, 7, 134-6  
 Coal-fields, 73-5  
 Coal (import of), 166  
 Coalisland, 74  
 Combmaking, 25  
 Concluding words, 198-202  
 Connemara, 45, 48-9, 50, 54  
 Copper and brass goods, 6  
     "    mining, 71-2  
 Corn and other food crops, 10-22  
 Cottage industries, 141-53  
 Crap, 67  
 Credit, 195  
 Cutlery, 6, 116
- DAIRY-FARMING, 32-43  
 Depression and its causes, 1-9  
 Dial-plate making, 7  
 Distilleries, 1  
 Donegal Bay, 45  
     "    Industrial Fund, 146-51  
 Drainage, 157-61  
 Dromod, 26
- EGGS, 152  
 Embroidery school, 151-2  
 English fiscal persecution, 4, 97  
 English market, the, 201
- FINANCIAL system, 29, 189-97  
 Fisheries, 6, 44-57  
 Flax, 59-64
- Flour-milling, 125-32  
 Food of the people, 13, 22, 129-32
- GALWAY and Clifden Railway, 49-50  
 Galway Bay, 45  
 Glass-works, 7, 114-6  
 Gold and silver lace, 7  
 Gold mining, 72  
 Granite, 81-3, 115  
 Gunmaking, 6, 117
- HANDICRAFTS, 133-40  
 Harbours, 44-5, 50  
 Hart, Mrs. Ernest, 146-51  
 Hay, 19  
 Hemp, 64  
 Hides and leather, 25, 105-7  
 "Historical Cause" of Depression, 3  
 Hosiery, 104
- IRON-MINING and smelting, 75-9
- JEWELRY, 6
- KANE, SIR ROBERT, 2  
 Kelp, 48, 68-70  
 Kilmacthomas, 98  
 Knitting, 146
- LACE, 152  
     "    gold and silver, 7  
 Land improvement, 154-64

Lead-mining, 71-2  
 Leather, 25, 105-7  
 Leinster coal-field, 74  
 Linen trade, 1, 95-7  
 Litter, 13, 91-2  
 Live and dead meat, 23-31  
 Lobsters, 50, 54

MACHINERY, 170-3  
 Manure (artificial), 25, 120  
 Marble, 79-81  
 Markets, 195-7  
 Meat, live and dead, 23-31  
 Metal-working, 6, 116-9  
 Middlemen, 26, 29, 196-7  
 Mines, 6, 71-9  
 Motive power, 165-73  
 Munster Dairy School, 40  
 Mussels, 55

NEEDLES and pins, 6, 118  
 Net-making, 47

OATMEAL, 14, 129  
 Oats, 12-3  
 Offal trades, 25  
 Osiers, 65, 143  
 Oysters, 54-5

PAPER-MILLS, 7, 122-5  
 Pastures, 11, 30, 33-6  
 Peat, 90-3  
 Periwinkles, 55-6  
 Piers, 50  
 Plants used in Manufactures,  
     58-70

Ponsonby, Mrs. Edward, 151-2  
 Poplin, 103-4  
 Pork, fresh, 27, 30  
 Potatoes, 14-6, 17-9  
 Pottery, 108-114  
 Poultry-raising, 152  
 Protection, 118, 131

QUARRIES, 6, 79-83

ROTATION of crops, 16  
 Railways, 26, 27, 49, 174-88  
 Reafforestation, 84-90, 155-7

SALMON, 56  
 Sausage-skins, 25  
 Self-help, 200-1  
 Ship-building, 7  
 Silver-mining, 72  
 Slates, 83  
 Sligo Estuary, 54  
 Soap-making, 25  
 State-assistance, 22, 41, 49, 52,  
     55, 188, 199-200  
 Straw, uses of 13, 65, 142, 145-6  
 Strikes, 114, 138

TEXTILE and leather trades,  
     94-107  
 Tillage, decrease of, 11  
 Timber and peat, 84-93  
 Tipperary coal-field, 74  
 Tobacco, 66  
 Trade Unionism, 138

- 
- |  |                       |
|--|-----------------------|
| Transit, 24, 27, 28, 41, 48-9, 56,<br>78, 82, 174-88 | Water-power, 167-70   |
| UNION, the, and industry, 3                          | Weaving, 146          |
| WASTE LANDS, 161-4                                   | Wheat-growing, 10, 12 |
| Waterford, 7, 114                                    | Wicklow mines, 72-3   |
|  | „ fisheries, 56       |
|  | Windmills, 170        |
|  | Woollen trade, 97-103 |

LONDON:  
PRINTED BY WILLIAM CLOWES AND SONS, LIMITED,  
STAMFORD STREET AND CHARING CROSS.







UNIVERSITY OF CALIFORNIA LIBRARY  
Los Angeles

This book is DUE on the last date stamped below.

OGT 9 1962

G 2 4 1964

RECEIVED  
MAIN LOAN DESK

SEP 4 1964

A.M.

P.M.

7|8|9|10|11|12|1|2|3|4|5|6

OL

REC'D LD-URB

SEP 24 1973

JUN 16 1974

Form L9-25m-9,'47 (A5618)444

UNIVERSITY OF CALIFORNIA  
AT  
LOS ANGELES  
LIBRARY

IOVE

CALL NUMBER

1009

SER VOL PT COP

ary

HC  
257  
I6D4

